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NEW CASES OF COMBINED PERNICIOUS ANEMIA AND DIABETES*

BY HOWARD F. ROOT, M.D.†

SINCE the publication of 48 cases of combined pernicious anemia and diabetes mellitus[1] 31 new cases have appeared. Ten were treated at the New England Deaconess Hospital in Boston, two were reported in detail by Shookhoff[2] and one by Smithburn, Fisher and Zerfas[3]. Schumann[4] records a case from Marburg. Gibson and Fowler[5] report the development of diabetes in a case of pernicious anemia long under treatment at the University of Iowa.

Three cases each were mentioned in reports by Dr. F. N. Allan[6] of the Mayo Clinic and by Dr. Francis D. Murphy and Dr. G. F. Moxon[7], the details of which they kindly permit me to record. To Dr. George R. Minot I am indebted for permission to describe two cases from the Thorndike Memorial Laboratory of the Boston City Hospital and two cases seen in private practice. Dr. J. S. Butzner kindly sent records of three cases from his practice in Scranton, Pennsylvania. The records of three cases were kindly provided by Dr. E. M. Watson[8], the University of Western Ontario, London, Canada. The increasing frequency of this association which formerly was considered extremely rare has been apparent in various localities, and seems worth bringing to the attention of physicians by a progress note.

TABLE 1

DEATHS FROM PERNICIOUS ANEMIA IN THE U. S. REGISTRATION AREA

1921	4333
1922	4935
1923	5098
1924	5412
1925	5878
1926	5878
1927	4480
1928	3576

Mortality Statistics 29th Annual Report U. S. Dept. Commerce, Bureau of Census, p. 13.

EPIDEMIOLOGY

Explanations of the increase must begin with the marked prolongation of life brought about in each disease by the discoveries of insulin and liver extract. The fall in mortality rates for diabetes at all periods of life excepting old age is becoming generally known. In Table 1 is shown the sharp decreased total mortality from pernicious anemia in the United States which followed the announcement of liver therapy by Minot and Murphy in 1926. Greater opportunity for the simultaneous occurrence of the two diseases certainly exists, but the frequency of pernicious anemia especially among diabetics of long duration suggests the possibility of some specific relationship. Thus, among 949 diabetic patients 25 years of age or over, admitted to the Deaconess Hospital during the 12 months ending January 1, 1932, there occurred ten cases of pernicious anemia, listed in Table 2. This rate of incidence is conservatively estimated because a group of similar size presenting moderate anemia, achlorhydria and a color index close to one have been omitted for lack of more definite symptoms and laboratory findings. Some of this group will probably later prove to be true cases of pernicious anemia.

Heredity stands out as important in both diseases. Thus, in 13 per cent of the cases with combined diabetes and pernicious anemia in which the data are available, pernicious anemia was known to exist in the family, and diabetes was known in 33 per cent. Naturally the accuracy of family histories for each of these diseases errs on the side of understatement rather than on the side of exaggeration. Males numbered 40 and females 39. In the total of 79 cases with sufficient clinical data the diabetes is stated to have preceded the pernicious anemia in 56 cases and in only 11 was pernicious anemia first in development. This point is discussed in a later paragraph. The youngest person to develop pernicious anemia was 32 years, and the oldest 76. The average duration of the diabetes before the development of the pernicious anemia was 5.3 years. In contrast, the duration of anemia before the onset of diabetes in the 11 cases where it took precedence was only 3.0 years. Indeed, in six of these 11 cases the duration of anemia was estimated at one year or less. It is worth recording that there has been no comparable increase in other blood diseases associated with diabetes. Thus, at the Deaconess Hospital only one case of leukemia was

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†Root—Physician, New England Deaconess Hospital. For record and address of author see "This Week's Issue," page 853.

TABLE 2

THIRTY-ONE CASES OF COMBINED DIABETES AND PERNICIOUS ANEMIA

Name or Case No.	Sex	Age at Onset		Gastric Free HCl	Date of Blood Counts	Blood				Urine		Spinal Cord Changes	End Results			
		D. M. Yr.	P. A. Yr.			Hemoglobin %	R. B. C. Mill.	Sugar %	Wassermann	Sugar %	Diacetic Acid		Living or Dead	Date	Age	Cause
2345	F	47	57	0	Nov., 1930	85	3.6	0.22	Neg.	0	0	0	L	Apr., 1932	59	
					Apr., 1932	80	4.8	0.19	—	0	0					
2411	F	42	58	0	Aug., 1929	80	3.9	0.16	Neg.	0	0	++	L	Feb., 1932	60	
					Jan., 1932	55	2.5	0.13	—	0.1	0					
3317	M	49	52	0	Apr., 1925	55	2.6	0.21	Neg.	0.5	0	+	L	Mar., 1932	60	
					Sept., 1931	55	1.7	0.44	—	1.8	0					
					Dec., 1931	80	4.6	0.20	—	0.3	0					
6020	M	49	54	0	Sept., 1931	70	2.8	0.18	Neg.	1.4	++	0	L	Mar., 1932	65	
					Oct., 1931	80	4.9	0.23	—	0.8	0					
9078	F	61	64	0	Feb., 1931	65	3.0	0.16	Neg.	0	0	0	L	Jan., 1932	65	
					Dec., 1931	75	5.0	0.18	Neg.	Tr.	0					
9819	F	46	51	0	Jan., 1931	75	5.4	0.24	Neg.	1.2	0	+	L	Jan., 1932	52	
9859	M	61	62	0	Feb., 1931	65	3.7	0.29	Neg.	2.9	0	+	L	Mar., 1932	63	
					Jan., 1932	35	0.9	0.19	—	0	0					
					Feb., 1932	60	3.2	0.12	—	0	0					
9920	F	63	57	0	Mar., 1931	70	—	0.27	Neg.	2.0	0	+	L	Mar., 1932	65	
					June, 1931	70	4.1	0.18	—	0.2	0					
8404	F	37	40	0	Aug., 1930	70	3.4	0.13	Neg.	3.0	+	0				
10035	M	68	69	0	Mar., 1931	35	1.5	0.36	Neg.	0.4	0	+	L	Mar., 1932	69	
Butzner, J. S. No. 1	F	52	53	0	Sept., 1929	64	1.5	0.13	Neg.	3.0	0	0	L	Mar., 1932	55	
" No. 2	F	62	66	0	Dec., 1929	58	1.8	0.21	Neg.	6.0	0	0	L	Mar., 1932	64	
" No. 3	F	59	56	0	Sept., 1928	56	1.3	—	Neg.	++	0	0	D	1930	60	Unknown
Smithburn, K. C. Fisher, W. S. Zerfas, L. G.	M	52	51	0	Sept., 1928	31	1.4	0.32	—	++	++	—	L	July, 1929	52	
Shookhoff, Chas. No. 1	F	57	58	5	Dec., 1928	60	1.4	0.16	Neg.	4.7	—	—	L	Apr., 1932	62	
					June, 1929	55	2.2	0.44	—	6.6						
					July, 1929	80	4.2	0.08	—	0						
" No. 2	F	53	60	0	Sept., 1929	45	0.9	0.24		1.2			L	Apr., 1932	64	
						55	3.0			0	0					
Minot, Geo. R. No. 1	M	55	63	0	Oct., 1930	50	1.9	0.17	Neg.	Green	0	++	D	Feb., 1931	63	Bronchopneumonia
" No. 2	F	40	49	0	May, 1931	27	1.4	0.33	Neg.	Green	0	0	L	Apr., 1932	51	
" No. 3	F	50	60	0	July, 1930	60	2.5	0.14	Neg.			0	L	Jan., 1932	62	
" No. 4	M	49	54		Dec., 1930	55	2.0	0.16	Neg.	Green		+	L	May, 1932	56	
Murphy, F. D. Moxon, G. F. No. 1	M	69	73	0	Feb., 1929	45	1.5	0.21	Neg.	0.5	+	+	D	Jan., 1932	76	Pneumonia
" No. 2	M	64	67	0	May, 1930	50	2.0	0.26	Neg.	2.8	0	0	L	May, 1932	68	
" No. 3	M	65	60	0	July, 1928	54	1.8	0.32	Neg.	3.9	++	+++	L	May, 1932	70	
Watson, E. M. No. 1	M	40	55	0	Mar., 1932	39	1.9	0.27	Neg.	3.5	+	+	L	Mar., 1932	57	
" No. 2	F	48	56	0	Mar., 1930	90	3.4	0.31	Neg.	5.0	0	0	L	June, 1932	58	
" No. 3	F	75	76	0	Nov., 1932	28	1.0	0.24	Neg.	Mod.	0	0	L	Nov., 1932	77	
Allan, F. N. No. 1	M	60	65		Jan., 1930								L	Sept., 1931	66	
" No. 2	M	57	58		Mar., 1926								D	July, 1931	63	? Insulin Reaction
" No. 3	F	66	65		1926								L	1932		
Schumann	M	50	50	0	Feb., 1931	65	2.5	0.24	Neg.	7.3	0	0	L	1932	50	

observed during this year. At the Mayo Clinic eight cases of blood disorders were noted in a year's treatment of diabetes, according to Allan, — of these three were pernicious anemia (personal communication) and the other five were secondary anemia.

CLINICAL FEATURES IN 31 NEW CASES

The extent of the anemia has varied. In three cases the red cells numbered less than 1,000,000 per cu. mm.; in 12 cases the count was from 1,000,000 to 2,000,000; in seven cases from 2,000,000 to 3,000,000; and in three from 3,000,000 to 4,000,000. Glossitis, pallor, weakness, diarrhea, anorexia and paresthesias occurred with varying severity. Diabetes alone is often accompanied by numbness and tingling, pallor and a smooth tongue, with the result that such symptoms are usually not attributed to anemia, until it is severe. In Case No. 2345 the degree of anemia has never been severe because achlorhydria was recognized several years before the anemia, and liver treatment has been used from its discovery. It is notable, however, that in the winter of 1932 when in the South, she developed a sore tongue which gave the characteristic raw, patchy appearance of glossitis. Relief within a few days followed the administration of liver extract intramuscularly.

Spinal cord changes were present in 12 of the new series and in 15 of the earlier series. In Case No. 2411 walking was impossible, and the ataxia of the hands was so severe that she could not feed herself. In Case No. 3317 the cord symptoms were first to develop and strongly suggested tabes dorsalis although there was no history or serologic evidence of syphilis. He was admitted to the Deaconess Hospital in September, 1931, with a high degree of anemia and with marked mental disturbance. Improvement not only of anemia but also of his mental and neurologic state promptly followed liver treatment and he is now actively at work. In Case No. 9819 the classical symptoms and findings of combined system disease were present and she developed as a result of a paralyzed urinary bladder a pelvic phlebitis requiring many months of treatment. At the time of her admission to the hospital she was not anemic because during the three months preceding her admission she had followed the dietary and liver treatment given by the family physician to her husband who also has pernicious anemia. Case No. 9859 entirely disregarded treatment prescribed in February, 1931, and returned to the hospital in January, 1932, delirious, almost moribund, incontinent, with anasarca to the shoulders. The use of liver extract intramuscularly resulted in prompt improvement. In fact, the number of reticulocytes in the circulating blood increased to 33 per cent in the course of six days. Case No. 10035 had a paralysis of the bladder but made excellent improvement under liver treatment although there was an enlargement of the prostate in addition. He suffered a relapse due to insufficient liver treatment and during the relapse the average volume of the red cells increased to 10^{-10} cu. mm. determined by the Haden method. In all cases where observations were made before treatment was begun, the color index was above 1.

PERNICIOUS ANEMIA PRECEDING DIABETES

The case of Gibson and Fowler is extraordinary for the long duration of pernicious anemia before onset of diabetes. He developed weakness and anemia in 1919, but recovered. In the autumn of 1921 recurrence of weakness and pallor with numbness of fingers, sore tongue, edema and gastric distress took place. The symptoms cleared up only to recur each autumn till 1924 when he was first observed in the Hospital of the State University of Iowa. At this time the urine contained much urobilin, the hemoglobin was 20 per cent and the red cells numbered 930,000. The spleen was palpable and signs of subacute combined sclerosis were present. He was treated with the standard diet employed by them at that time, containing about 100 grams liver daily and fresh fruits and vegetables, with rapid regeneration of red cells so that in two months' time the red blood count increased to 3,850,000. The second and third admissions to the hospital were due to the development of anemia caused by failure to follow his diet. In July, 1931, he returned with typical symptoms and laboratory findings of diabetes mellitus. Insulin was used with good results. In case No. 9920 pernicious anemia preceded the development of diabetes by eight years. She also had primary hyperthyroidism which was treated successfully in another hospital by means of x-ray. Her anemia was under good control when she was treated at the Deaconess Hospital. Parkinson[9], who reported the first case of this combination, discussed the possibility that anemia and deficient oxygenation in some way affected the pancreas so as to produce diabetes. In his case, the diabetes developed after the anemia. However, in the great majority of cases so far reported diabetes has seemed to precede the anemia. This statement is made with some reserve because it is apparent from our own cases, such as Case Nos. 2345 and 3317, that the date of onset of pernicious anemia may be most difficult to determine. Thus in Case No. 2345, achlorhydria was discovered during an attack of diarrhea in 1924, or six years before the date when anemia was present. Perhaps this date should be accepted as the onset of pernicious anemia rather than 1930. Case No. 3317 complained of symptoms suggesting tabes dorsalis rather than anemia in April, 1925, when his hemoglobin was but 55 per cent. He did not carry out antianemia treatment, yet did not develop severe

anemia for six years. May he not have had mild anemia for several years prior to 1925?

Perhaps in determining the relation between the onset of diabetes and pernicious anemia, one should only consider cases in which a difference of five years or more exists between the dates of onset. If this be done we exclude all but 30 cases, in which diabetes developed first in 27 cases and pernicious anemia in three cases.

THE SPECIFIC INTRINSIC FACTOR IN PERNICIOUS ANEMIA AND BORDERLINE CASES

In one case reported by Shookhoff free hydrochloric acid was found in two specimens of gastric secretion out of four. In none of the Deaconess Hospital cases here included have we found free hydrochloric acid in the gastric secretion, although histamine is usually employed. The reports of Castle, Heath and Strauss[10, 11] which indicate that a specific intrinsic substance manufactured by the normal gastric mucosa is missing in pernicious anemia and may be missing in rare cases in which free hydrochloric acid is produced, make the diagnosis of pernicious anemia in borderline cases more important, as well as more difficult. Recently Strauss, in studying the anemias of pregnancy, has obtained results suggesting that a temporary suppression of formation of the intrinsic factor by the gastric mucosa may occur with a later resumption of its production, and recovery from the anemia. Great variations in the apparent severity of diabetes occur in the same individual when observed over a long period of time and it is conceivable that the gastric secretion may be affected by such variations, just as is the central nervous system, the skin or the liver. A patient may begin with a blood picture consistent with hypochromic anemia and later appear with a typical case of pernicious anemia. Case No. 6669, male, with onset of diabetes at 26 years of age had a red blood count of 2,950,000, hemoglobin 57 per cent, and free hydrochloric acid titrated at 28 cc. at the age of 52 years. During the 11 months preceding his death at the age of 53 years, he received 15 transfusions for a severe anemia which finally proved fatal. These borderline cases are not infrequently seen in the diabetic clinic. They are characterized by anemia, a color index very close to 1, a moderate resistance to liver treatment as judged by the fact that although a moderate increase in the reticulocyte count may occur, they develop an increase in hemoglobin and red cell count very slowly. At the Deaconess Hospital such cases have usually been found in patients with diabetes of long duration and complicating severe infections of the extremities. Occasionally small amounts of free hydrochloric acid in the gastric secretion have been accepted as proof that the anemia was not of a true pernicious type. However, in at least one case the diagnosis of pernicious anemia was tentatively made in spite of the presence of a small amount of free hydrochloric acid, although that case is not included in the series here reported. We have felt that this borderline group should be treated by dietary measures and that as a rule prolonged observation is necessary to establish the true nature of the anemia. So frequently is anemia seen among diabetic patients that we have come to look for it with the same expectant care that has always been emphasized with respect to pulmonary tuberculosis.

TREATMENT

So far, little difficulty in controlling the anemia by the use of liver or liver extract has arisen. Cases requiring unusually large amounts of liver have occurred, as illustrated by one of the Boston City Hospital cases. Liver extract administered intramuscularly has been most useful in cases with extreme anemia in which death was threatening. All cases at the Deaconess Hospital have received insulin, the amounts varying from five units a day to as much as 50 units a day. Case No. 9859 illustrates an extraordinary difference in the course of the diabetes and the anemia. When he left the hospital in February, 1931, he required 30 units of insulin a day, and he had very little anemia. Although he disregarded all dietary and therapeutic instructions and became intensely anemic, when he returned to the hospital in January, 1932, not only was the urine sugar-free and the blood sugar normal, but it continued so even after his diet was steadily increased to 150 grams of carbohydrate daily.

SUMMARY

(1) Thirty-one cases of combined diabetes and pernicious anemia are analyzed in addition to the 48 previously reported.

(2) Diabetes was apparently first to develop in 24 cases.

(3) The occurrence of anemia in diabetic patients is fairly frequent, especially during complications such as pyogenic infections. It may remain of uncertain type for a considerable period before developing the characteristic features of pernicious anemia.

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PULMONARY CAVITATION AND THE PRINCIPLES OF SURGICAL TREATMENT*

BY RICHARD H. OVERHOLT, M.D.†

IT is a well-established clinical fact that pulmonary cavities show a poor tendency to heal spontaneously. Whether the area in the lung has been destroyed by tubercle bacilli or by pyogenic organisms, the usual history extends over a long period, during which time there has been cough and expectoration. If a case showing a pulmonary cavity is followed by roentgenographic studies from time to time, frequently no change or an actual increase in the size of the cavity is found. It is the purpose of this paper to discuss some of the mechanical factors which lead to chronicity in pulmonary lesions and to discuss the application of surgical procedures which aid in their obliteration.

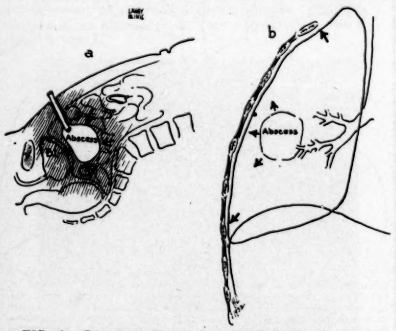

FIG. 1. Diagrams illustrating the direction of the force exerted by the surrounding tissue in: (a) an abscess in the pelvis, (b) an abscess within pulmonary tissue.
Note that in the first instance (a) the surrounding viscera crowd in toward the center of the abscess cavity. In the lung (b), the surrounding tissue must conform to the size of the thorax and the direction of this force is away from the center of the abscess cavity.

In the treatment directed to any area in the body in which there has been gross tissue destruction, we endeavor to provide rest to the part, adequate drainage and obliteration of the space created by the destructive agent. This discussion concerns itself primarily with the problem of the filling in of the space created by the loss of tissue substance as a result of a diseased process in pulmonary tissue.

For comparison, it would be well to consider the factors which obliterate an abscess cavity in other regions of the body, for instance, an abscess in the pelvis. In this situation, the surrounding viscera crowd in so that a pressure is exerted against the walls of the cavity. The direction of the force is toward the center of the cavity. (See figure 1a.) Very often this crowding in process takes place so readily that artificial methods, such as the insertion of packing or drains, must be used to keep the area open until the proper time for the walls of the cavity to come together. Other factors, of course, in this problem of space obliteration, are the filling in by granulation tissue and later fibrous tissue contraction. The tendency of the soft parts to crowd in early in the process of healing, and later, for this pressure on the walls of the cavity to favor the contraction of fibrous tissue, makes it the most important factor in the obliteration of tissue spaces.

In the lung, a different situation exists. The walls of the thoracic cage maintain more or less a minimum fixed volume and hold the lung to that volume. A loss of an appreciable amount of lung tissue, creates a discrepancy between thoracic volume and lung volume. A cavity is the result. Then, too, the fact that the boundaries of the lung are obliged to extend to the boundaries of the thorax, even though a part of the lung substance has been destroyed, is unfavorable for the shifting of surrounding healthy lung tissue toward the defect. To think of the peripheral pull on the cavity wall by the lung tissue in another way, one can consider the relationship of the pressure in different parts of the chest. Surrounding the entire lung a potential space exists in which the pressure, during both phases of respiration is always normally subatmospheric. The intrapulmonic pressure and the pressure within the cavity, providing the cavity communicates with a bronchus, vary from a pressure slightly in excess of atmospheric pressure to a slightly subatmospheric one during the act of respiration. The pressure within the cavity, then, is always greater than the pressure in the surrounding areas and pleural space. This means that the force of action on the walls of a pulmonary cavity is away from the center of the cavity or toward its periphery. (See figure 1b.) The outward pull is greatest when the thoracic cage is being expanded, i.e., during inspiration. The force then, acting upon the walls of the pulmonary cavity, is exactly the reverse of what is found in the case of an abscess cavity in the soft parts of other regions of the body. An explanation is then available for the difference in the tendency of areas in the lung to close as compared with the facility by which cavities elsewhere become obliterated.

*From the Department of Thoracic Surgery, Lahey Clinic, Boston.

†Overholt—Surgeon, Lahey Clinic, in charge of Thoracic Surgery. For record and address of author see "This Week's Issue," page 853.

However, it is known that pulmonary cavities may close spontaneously. If such occurs, it is required that the contraction of fibrous tissue is sufficiently strong to overcome the outward pull of the thoracic cage. In order to have cavity obliteration by fibrosis, one or all of the following adjustments must take place. The surrounding healthy lung tissue on the same side must distend, or the hemithorax on the diseased side must decrease in size. This can be brought about by a shift of the mediastinum, trachea and heart with a compensatory emphysema of the contralateral lung, by diaphragmatic elevation and by a diminution in the inter-rib spaces on the affected side. (See figure 2.)

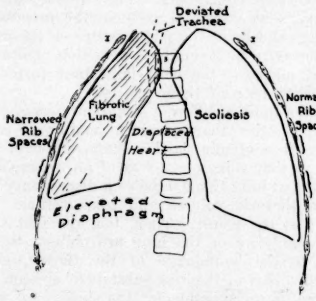

FIG. 2. Diagram of the chest to illustrate adjustments that must be made if the space in the lung resulting from a disease process heals spontaneously. The volume of the affected lobe must be made smaller by an adjustment of the boundaries of the hemithorax. To a certain extent this can be brought about by a shift of the heart and trachea, a diaphragmatic elevation and a diminution in the spaces between the ribs on the involved side. One or all of these adjustments must take place if spontaneous healing is to follow. In long-standing cases the contraction of the thorax on one side results in a scoliosis of the thoracic spine.

The presence of adhesions about the lung, or fibrosis in the mediastinum, frequently prevents the moving in of the surrounding tissue to fill a cavity. When these intrathoracic adjustments fail to obliterate the space spontaneously, there are various surgical procedures which will facilitate closure. All are based upon the principle of making the hemithorax on the affected side smaller. If the pleura be free of adhesions, the introduction of air into the pleural cavity will permit the pulmonary lobes to collapse, the walls of the cavity to come together and healing to take place. The next procedure which may diminish lung volume is effected by an evulsion of the phrenic nerve with resulting diaphragmatic elevation and limitation of its motion. (See figure 3a.) The size of the hemithorax after such an operation is reduced by approximately one-third. Many times this is sufficient to equalize the difference between thoracic volume and that volume to which the healthy lung can expand to completely fill the hemithorax without the maintenance of cavitation. The final method of diminishing the size of the chest over a lung cavity is to remove portions of the bony thorax, one of the so-called thoracoplasty operations. The extent in the reduction in the size of the thoracic cage by such procedures depends upon the particular ribs which are removed, the number, and the length of the excised segments. In figures 3b, c, and d, there is illustrated diagrammatically the alteration that can be produced in the chest by the

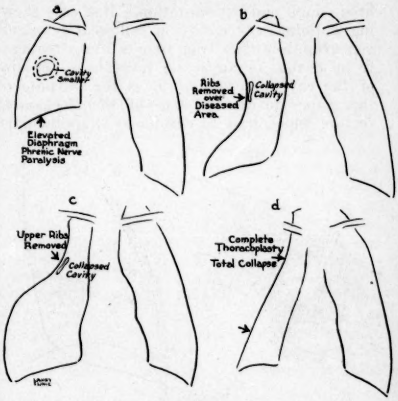

FIG. 3. Diagrams to show how various surgical procedures diminish the size of the thorax and permit cavities to close in. (a) The altered volume of the chest after phrenic paralysis. All pulmonary lobes on the paralyzed side partake to a certain extent in the collapse, provided there are no pleural adhesions. (b) The effect of the removal of rib segments in the midportion of the thorax to better permit a middle lobe or central abscess to close in. (c) The collapse obtained by an upper posterior thoracoplasty provided long segments of the upper ribs are removed. A more limited yet complete collapse of the apex can be obtained by the removal of the entire upper three or four ribs. (d) The result of a complete thoracoplasty in which the posterior segments of the first to eleven ribs are removed.

removal of segments of consecutive ribs from various parts of the bony thorax.

If the cavity is of long standing with a thick fibrous wall, the spherical nature of the wall itself may, from a structural standpoint, prevent the walls from coming together. In such a stage either the intrinsic contraction of the connective tissue or the release of the suspending effect of the bony thoracic cage may not result in cavity obliteration. In such events it may be necessary to exert a definite pressure against the walls of the cavity by the insertion of paraffin or gauze packing beneath ribs which are left in situ for counter pressure until the cavity has become closed and healed.

A clinical estimation of the extent of the pulmonary cavitation can often be obtained, provided there is a bronchial communication, by measuring the twenty-four hour amount of sputum. The larger the cavity or the more ex-

tensive the cavitation, the more copious the output of sputum. As a rule when the cough has been abolished with a disappearance of expectoration, the cavity has become obliterated.

CASE I. Mr. J. L. Aged 35. Referred by Dr. Pillsbury of the Norfolk County Sanitarium. The pulmonary symptoms in this case were initiated two years previously. Six months later he had five pulmonary hemorrhages within a twenty-four hour period. He was then admitted to the sanitarium. Since this time he has been a bed patient with completely restricted activities. The sputum was repeatedly positive for acid-fast organisms, was green in color and of thick consistency. The amount of expectoration had varied from eight to ten ounces in twenty-four hours. The early roentgenograms showed an extensive unilateral tuberculous process on the left side with areas of caseation and cavitation. Soon after his admission to the sanitarium a pneumothorax was attempted several times without success. Subsequent x-rays showed a progression of the process to involve the entire left side with the development of a great deal of fibrosis. The heart, mediastinum and trachea were displaced to the left. (See figure 4.)

FIG. 4. Preoperative roentgenogram in case I showing extensive left-sided tuberculosis with multiple cavitation. Note displacement of trachea and narrowed inter-rib spaces which represent nature's effort to permit the fibrous tissue to close down upon the diseased areas, as diagrammatically shown in figure 2.

The physical examination revealed a man weighing two hundred and seven pounds, slightly sallow with suggestive cyanosis of lips and nail beds. There was marked clubbing of the finger tips. The physical signs in the left chest showed what one would expect in a late extensive tuberculous involvement. The expansion was limited, the inter-rib spaces narrowed, and the percussion note impaired throughout the left side. There was increased tactile and vocal fremitus over the same areas. There were many coarse bubbling râles heard over extensive areas on the left. The right chest was clear except for occasional râles in the axilla. During the period of preparation the heart rate averaged slightly more than one hundred. The remainder of the examination was not important. The urine examination was negative. The red blood count was 5,200,000 and the hemoglobin was 75 per cent. The white blood count was 39,600. The vital capacity was 2400 cubic centimeters.

The patient was transferred to the New England Deaconess Hospital on November 17, for thoracoplasty. A multi-stage operation was planned because of the extensive lung involvement, persistent tachycardia and the large volume of daily expectoration. A four stage procedure with ten day intervals was carried out as follows: 1. Posterior resection of ribs one to four under intratracheal ethylene anesthesia. 2. Posterior resection of ribs five to seven under local anesthesia. 3. An anterior resection of remaining segments of ribs one to six under local anesthesia. 4. A posterior resection of ribs eight to eleven under spinal anesthesia. (See Figures 5 and 6.)

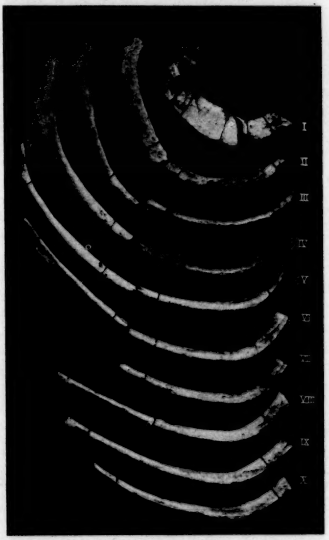

FIG. 5. Photograph of rib segments removed in case I. An extensive resection was necessary because of the widespread involvement on the left side requiring a complete collapse of that side.

FIG. 6. Postoperative roentgenogram of case I showing complete collapse of the left chest. Note that the position of the trachea has now returned to the midline.

Following the first stage of the operation the sputum increased in amount to twenty-five ounces in twenty-four hours and then gradually decreased to one to six ounces. (See Figure 7.) The character

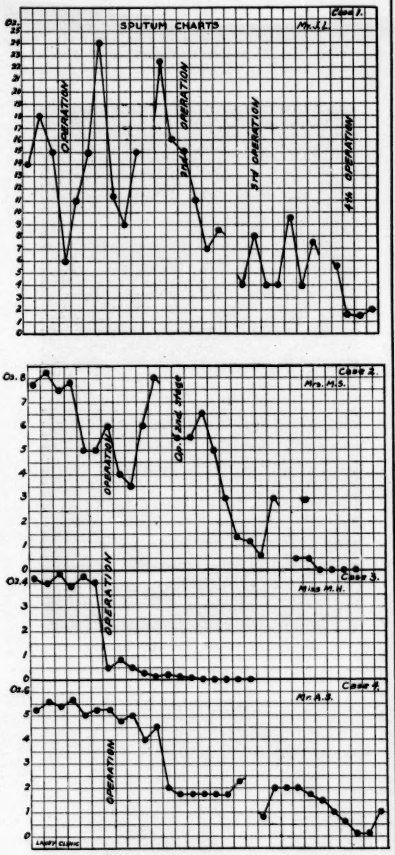

FIG. 7. Copy of hospital sputum charts in four reported cases. The amounts of sputum are recorded in ounces for a twenty-four hour period. Note the definite decrease in the daily amounts in each case after surgical collapse.

of the sputum changed from a thick green to a thin white material. The vital capacity ten days after the last operation was 1400 cubic centimeters.

Comment. In this case, practically the entire left lung had been destroyed by the tuberculous process. The forces of nature did everything possible to close the resulting pulmonary cavities by fibrous contraction. The hemithorax on the affected side was reduced somewhat in size by the ribs being pulled closer together, the diaphragm drawn up and the heart and mediastinum moved over to the affected side. Yet, there were still cavities which had a capacity upwards to twenty-five ounces of sputum. When the thoracic wall was permitted to move medially by removing the overarching ribs, and the size of the chest adjusted to the size of the contained healthy tissue, the walls of the cavities could then come together and be closed by the continuation of the contraction of fibrous tissue. In this case the resection of ribs was of necessity an extensive one because of the total destruction of lung tissue on one side. The patient sacrificed no healthy pulmonary tissue and materially reduced the likelihood of an extension to the contralateral lung.

CASE II. Mrs. M. S. Aged 35 years. She came to the Clinic in July, 1932, because of extreme weakness, cough and foul expectoration. She had been bedridden for a year. Her trouble started with pneumonia, was followed by pleurisy and soon afterwards cough, hemoptysis and foul expectoration. The amount of sputum varied up to twenty ounces daily. The rest of the history was not remarkable. The physical examination showed a middle-aged woman with all the external evidences of pulmonary suppuration, anemic appearance, foul breath, and clubbed finger tips. The expansion of the chest was diminished on the left and the heart was displaced to that side. The percussion note was decreased over the upper left lobe anteriorly and there were areas over which bronchial breathing and râles could be heard. An x-ray showed the presence of multiple cavities in the lower portion of the left upper lobe. (See figure 8.) Sputum examinations

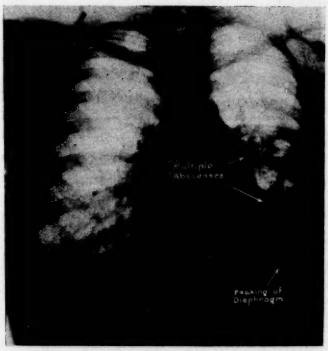

FIG. 8. Preoperative roentgenogram of case II showing extensive involvement of the left lung with multiple lung abscesses. Note peaking of the diaphragm on the left which results from diaphragmatic adhesions and the contraction of fibrous tissue.

were repeatedly negative for acid-fast organisms. Drainage from the involved areas by way of the bronchi seemed adequate. Lipiodol injected into the left main bronchus found its way into the pulmonary cavities. Dr. Hoover found no obstruction in the major bronchi upon bronchoscoping the patient. A regional thoracoplasty was planned and carried out in two stages. In the first operation, the fifth to

the tenth ribs were stripped of their periosteum from the posterior axillary line to the midclavicular line. Packing was inserted beneath the denuded ribs. This pushed the periosteum, intracostal tissue and parietal pleura, toward the center of the lung at a point over the abscess area. The ribs served for counter pressure against the gauze pack. Two weeks later, the wound was reopened, the pack removed and the denuded portions of the overarching ribs resected. The skin flap was then permitted to fall into the concavity in the chest wall.

The cough and expectoration showed a marked decrease as indicated in figure 7. Upon discharge of the patient, the expectoration was less than an ounce a day and upon follow-up examination four months later, there was reported only an occasional cough with practically no expectoration. (See figure 9.)

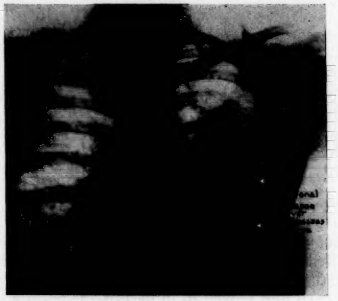

FIG. 9. Roentgenogram of case II, three months after operation showing change in contour of thoracic cage and the resulting diminution in the volume of the left lung. Notice that the change in the thoracic cage was made in the region of the greatest lung involvement.

Comment. In this case of non-tuberculous pulmonary suppuration, with multiple cavities, the drainage factor was taken care of by the bronchi. A year had elapsed during which time spontaneous healing had not taken place. The remaining healthy lung tissue did not fill the thoracic cavity on the left side. The chest on that side was made smaller by the removal of ribs over the site of the lesion. This permitted a contraction of fibrous tissue in the diseased area which in turn, obliterated the cavity.

CASE III. Miss M. H. Aged 24 years. The history of this case is one of pulmonary tuberculosis dating back one and one-half years with sanatorium care in the Norfolk County Hospital during that period A roentgenogram revealed an extensive lesion with multiple cavities in the right upper lobe. (See figure 10.) A partial pneumothorax had been temporarily employed but had to be discontinued because of fluid accumulation and inadequate collapse of the upper lobe. The sputum varied from three to eight ounces per day. Roentgenographic examination from time to time failed to show any improvement in the lesion during the preceding six months. An upper right posterior thoracoplasty was carried out. Long segments of the first to the sixth ribs, inclusive, were removed. The segment of first rib removed measured four centimeters, the second eleven centimeters, the third seventeen centimeters, the fourth 17.5 centimeters, the fifth eighteen centimeters and the sixth sixteen centimeters. A marked reduction in the daily output of sputum is shown in Figure 7. (See figure 11.)

FIG. 10. Preoperative roentgenogram of case III, showing extensive involvement of the right upper lobe with tuberculosis. Note tracheal displacement toward affected side.

FIG. 11. Postoperative roentgenogram of case 3 after long segments of the upper posterior ribs had been removed. Note extent of collapse of right upper lobe and the return of the trachea to the midline.

Comment. In this case the size of the chest was reduced and this reduction took place in the area of maximal disease in the lung. The definite and sustained decrease in the output of sputum following an operation, which released the lung over the cavities and permitted the fibrous tissue to contract down and close the spaces indicates that this mechanical factor was largely responsible for the failure of spontaneous healing.

CASE IV. Mr. A. S. Aged 33 years. Cough and expectoration of two and one-half years' duration brought this patient to the Clinic. The onset was

gradual without apparent etiology. He had been treated in another city by repeated bronchoscopic aspirations, twenty-eight in number, without improvement. His sputum quantity varied up to three ounces daily. An x-ray of the chest showed multiple thin-walled cavities in the middle lobe on the right side. (See figure 12.) A lipiodol injection and bronchoscopy demonstrated satisfactory drainage by way of the bronchus. An extensive regional compression of the diseased area was carried out in a manner similar to that used in Case II. The fourth to the eighth ribs were stripped of their periosteum in the lateral and anterior portions of the right chest. Packing was inserted beneath the denuded ribs, left there for two weeks and then the wound reopened, the ribs resected and the packing removed. The chest wall had moved in to form a definite concavity over the middle lobe on the right side. A sponge rubber dressing was employed until there was complete reformation of the ribs from the periosteum which had not been removed. An immediate reduction in the amount of sputum was noted before the patient left the hospital. The patient was examined five months after operation at which time he reported an improvement of eighty per cent in the cough and practically no expectoration. A roentgenogram of the chest after lipiodol injection of the right main bronchus showed an entirely different picture than that seen in the preoperative film. The only evidence of cavitation was found at the lower border of the right middle lobe where a small single cavity persisted with a complete obliteration of the remainder. (See figure 13.)

FIG. 12. Anteroposterior roentgenogram of case 4, showing multiple cavities of the right middle lobe. Lipiodol had previously been injected. Note the extent of the cavitation, peripheral location and absence of bronchiectasis.

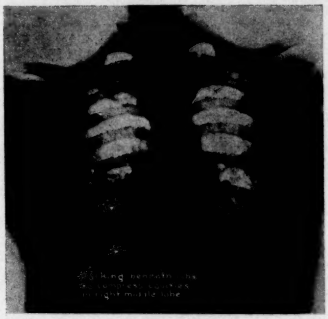

FIG. 13. Anteroposterior roentgenogram of case IV after packing had been inserted beneath lower ribs anteriorly to compress abscess cavities. After two weeks, the overarching ribs were resected and the packing removed. Note alteration in the contour of the chest wall in the right lower portion. No evidence of cavitation can be seen.

Comment. The problem here, as in the others, was not so much one of drainage as it was of cavity obliteration. The bony thorax prevented the walls of the cavities from coming together. The contour of the chest wall was changed and moved in to permit the middle lobe to assume a smaller volume. Fibrous tissue in the diseased area was then able to contract down and practically obliterate the cavities.

Summary: The mechanical factors favoring chronicity in pulmonary cavities have been discussed. The conditions which permit spontaneous healing have been mentioned. Surgical methods of decreasing the size of the thorax on the involved side to the size of the contained healthy lung tissue, thus permitting obliteration of spaces by fibrosis have been considered. Cases illustrating these procedures have been reported.

PARENTS AND TEACHERS SHOULD NOTE

. . . "Twice as many girls as boys fall victims to tuberculosis between the ages of 15 and 24."

Miss Jessamine S. Whitney, Statistician of the National Tuberculosis Association, is authority for the above statement. In a recent communication on the subject of tuberculosis in adolescents Miss Whitney went on to say:

"Because of its insidious onset the disease tends to be recognized too late in most young women. Widespread education as to the recognition of early symptoms, and prompt and consistent treatment are probably the methods from which we can expect the most success in reducing the toll in this age group as well as in all other age groups.

"Special care obviously is necessary to protect these girls. They should by all means consult a physician immediately if they show any of the early symptoms of tuberculosis, among which are a cough that hangs on, too easily tired, indigestion and loss of weight." — *The Massachusetts Health Journal.*

NEW ENGLAND SURGICAL SOCIETY

TRAUMATIC ARTHRITIS*

BY FREDERIC JAY COTTON, M.D.†

ALWAYS, loosely, we have talked about traumatic arthritis. As a descriptive term, as used, it means nothing, or several things vaguely, which is next to nothing.

It is obvious that we can have after injury exacerbations of arthritis previously present, of the "atrophic" type, whether real exacerbations of the pathology or just sprains of already half-crippled joints is open to question. That we can have, given predisposition only, a fresh arthritis of this type due to trauma is very doubtful.

In the "infectious" type, again exacerbations of the arthritis from trauma seem to happen even though the joint is but adjacent to, but not directly involved in, the trauma. They occur reasonably promptly and are typical, with heat, swelling, redness, stiffness, tenderness, pain, and some rise of temperature.

This picture is not very rare in those already frankly arthritic, but may also occur, though very unusually, in those without previous arthritic history, without provable foci of infection. The condition is rare enough to make us scrutinize very closely the relations in this history, in the vicinity of trauma and joint, and, in time, in all cases of such arthritis charged to injury.

Now in relation to the hypertrophic type the situation is different. It is true that the incidence of hypertrophic changes, or at least their intensity, may be affected by trauma. One needs only to study a series of specimens of old hip fractures (like the Phillips-Maxwell-Ruth collection) to know this.

We have grown to look on hypertrophic joint change as a matter of age of the persons or early age in an overused joint and it is hard to believe that trauma ever actually originates such process, any more than it originates sclerosis of arteries, which is in its way similar.

What we see, in fact, are many cases in which previously degenerated joints, often without symptoms, develop signs of trouble after injury or after the unavoidable disuse following injury, and that injury may not have *directly* affected the joint in question.

The debatable questions are, first, has the injury in any way increased the rate of progress in the joint pathology? Secondly, has there been a return to the status quo, or some persistence of disability or discomfort, some imperfection of recovery irrespective of any increase in the lesions? These questions will always be debatable, case for case, unless there be x-ray evidence previous to or promptly after injury. This is often lacking.

As to hypertrophic changes originating in injury, the presumption is always against such causation, and many lame backs, for example, have nothing to do with the bone changes undoubtedly present in the spine as they are so commonly present in middle age or later.

There are, however, two other classes usually passed as arthritis much more directly connected with trauma. One is osteochondritis, the traumatic arthritis of Allison and Osgood*. These cases show overgrowth of the cartilage and to some extent of the bone at the joint edges, with a tendency to separation by breakage or erosion of separate bodies mainly cartilaginous, often many, sometimes large, free in the joint or adherent to the capsule. Such bodies seem to grow larger by accretion in the nourishing medium of the synovial fluid. In some cases the free body seems definitely to originate as a fragment of cartilage (and some bone) broken out of a femoral condyle for instance by direct trauma, grown by accretion†. In other cases the origin is not marginal but central as in those cases in which one after another fragment becomes undermined and separated, often extruded into the joint, though they may be found still under ligamentous covering. The familiar picture in this type is that in which the seat of origin is the intercondyloid notch of the femur‡.

This has been called osteochondritis dissecans, and elaborate theories have been evolved of antecedent vessel change with consequent undermining of the pieces which become separated.

This small class of intercondyloid pathology may not fairly belong with the other traumatic cases of osteochondritis, but the clinical history is apt to be of trauma, the clinical picture similar and one of the theories invokes trauma through the crucial ligament as the cause. It may be thus: and in all save the second subclass, of the chipped bone, the trauma seems not of single so much as repeated injury, repeated abuse‡.

*Read at the meeting of the New England Surgical Society at Hartford, Connecticut, October 1, 1932.

†Cotton — Consulting Surgeon, Boston City Hospital and Faulkner Hospital. For record and address of author see "This Week's Issue," page 853.

*The writer, personally, would like to see the term "traumatic arthritis" definitely accepted as the definition of this class only.

†Codman many years ago noted the occurrence of this pathology.

‡There are cases of moderate bony overgrowth following trauma without much arthritic reaction, as in the cases of elbow injury following dislocation or even over-strain in which coronoid or olecranon thicken and grow so as to limit motion. These seem to belong somewhere in this class.

They are, typically, athlete's joints. In all these cases the history becomes one of mechanical irritation from interference with motion, with or without the slipping or jamming of wandering free bodies in the joint. With time there is joint reaction. Such joints opened show the synovia reddened, somewhat thick, often with overgrown fatty tabs—"villous arthritis" and with synovial fluid in excess, very glairy, not seldom blood-tinged. Cartilage surfaces of the actual articular faces show little change, save marginal thickening.

With the mechanical clearing out of a proper operation, the process becomes quiescent, usually clinically cured. Nevertheless we must call it arthritis and one thinks it is the only form that can fairly be called traumatic arthritis.

The last form for discussion is important, but despite the assumed clinical identity it is not an arthritis at all.

The class includes those hands or feet, or sometimes other joints, that without inflammatory signs stiffen up after trauma (not always fracture or dislocation) and not only become useless in the course of convalescence but remain useless with a puzzling resistance to any routine handling. Slowly some of them improve under physiotherapy and time and use to some extent, and some are hopelessly stubborn and result in permanent lessened usefulness.

The clinical picture is typical enough, and the cases fail of recognition because people don't know about them; it is an unrecognized class of trouble to all concerned and the damage is often charged to over-immobilization, age or arthritic tendencies.

In fact, until a few years ago there would seem to have been no recognition of the trophic circulatory background of these cases.

One has only to look at the obviously non-inflammatory picture, the low surface temperature, the slowed circulatory return, the stiffness and in more marked cases the cyanotic pallor, the hypoesthesia of the surface and the actual glazing of the skin, with total shrinkage of tissue as in the fingers, to have a clear picture of sympathetic spastic or direct trophic trouble.

In some instances one finds a lessened arterial beat not only on the injured side but in less measure on the other.

We have the picture of thrombo-angiitis or Berger's syndrome quite completely.

In three cases I have seen the posttraumatic picture go on to seemingly typical Berger's disease and in one case a typical picture of early Raynaud's disease, all bilateral in some measure but showing predominantly on the injured side.

Of the first three cases one, very severe, involving both legs gave us a chance to see the condition develop weeks after injury to one knee. This case yielded to protein therapy with complete and lasting relief after two years.

Of the other two, similarly bilateral, following ankle lesions, one yielded moderately to therapy and he would still pass as an arrested case of thrombo-angiitis obliterans when last seen.

The third, less severe, did not progress and showed only mild symptoms remaining when last seen with circulatory abnormality only. These last two were brothers, Irish, not Jewish, in ancestry.

The Raynaud's case I reported[2] was the result of definite occupational not accidental trauma affecting a thumb with definite fleeting attacks in the other hand. The condition, primarily very marked indeed, yielded to protein therapy completely with only a trifling local numbness remaining, with no recurrence for a long time.

Another case, showing a marked picture, followed rather slowly after an ankle fracture. The other foot showed nothing. He declined usual protein therapy, but his physician used insulin injections with prompt improvement. He is reported well.

Another case with marked unilateral changes running to extreme cyanosis of the whole leg up to the knee, followed exposure as well as strain on the leg. Improvement followed on insulin treatment persisted in after his return to Cleveland. I am told he has had severe circulatory upsets since this and it may well be a case of actual Berger's disease, posttraumatic only by chance of the date.

Another case of double wrist fracture with stiff useless hands and wrists, obvious local circulatory embarrassment, and small pulses, was in a vigorous laborer. At six weeks despite physiotherapy I found him absolutely unimproved, unpromising, and sent him into the hospital for injections.

Within a month he was fretting to go back to work and soon went.

Another case I "inherited" after six months of stiffness following Colles' fracture and here, too, protein therapy produced prompt improvement and full recovery within two months.

Two similar cases of ankle atrophy following fracture were similarly satisfactory. These three showed only one-sided lesions.

As a series these amount to little, but may illustrate the point it is desired to make here, namely, that after trauma there are sometimes profound changes in circulation, nutrition and function that we can explain only as dependent on some reflex sympathetic disturbance.

They may occur in individuals with no significant previous history, following any trauma, most often with fractures, and may go on to profound disturbances and grave atrophy of bone and soft parts with little tendency to improve under any routine care.

The repair of the atrophic changes in bone

gives a rather unusual picture, the curious spotty re-calcification first called to my attention by Dr. A. W. George, the radiologist, and since repeatedly confirmed. They do not, so far as seen, show a tendency to go on to extremes, to gangrene for example. They improve under the dilator reaction of protein (typhoid vaccines given intravenously, or less well to insulin) and may well furnish cases sometimes for nerve injection or even ganglionectomy.

The important thing is to recognize them and treat them as a posttraumatic symptom complex of nerve origin, in no way related to real arthritis of any type.

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PRIMARY OMENTAL TORSION

BY RICHARD H. WALLACE, M.D.,* AND RICHARD H. MILLER, M.D.*

TORSION of the great omentum, without other pathology, was first reported in 1902, in this country by Baldwin[1], and in Australia by Syme[2]. Since then more than forty cases have been published[3, 4, 5, 6]. The records of the Massachusetts General Hospital show five such instances, two of which[7, 8] have been previously reported. We describe below three personal cases, three from the hospital in addition to those already reported, and also two cases of secondary torsion which present features of especial interest.

Textbooks give no mention of primary torsion of the omentum and most authors dismiss the general topic of omental torsion with a few lines. This unusual condition is most often found in relation to inguinal hernia, but may result from bands or adhesions, tumors, and intra-abdominal inflammation. The term "primary omental torsion" should refer only to cases without hernia, adhesive bands, tumor, or inflammation of other organs; in short, without any other pathology which cannot be explained on the basis of the omentum as the primary offender. Cases with coexisting hernia should not be considered primary even though the hernia is apparently unrelated. Such a case is, however, referred to below.

The classification therefore should be simple, and is as follows:

I. Primary torsion (unassociated with other pathology).
II. Secondary torsion.
  1. Associated with hernia.
  2. Associated with other pathological conditions.

The entire omentum or any portion may be involved and as many as eight complete twists have been reported. The condition of the omentum may vary from mere congestion to gangrene and necrosis, depending on the duration and degree of impairment of the circulation. At operation the involved area is usually found to be dark red or purple, with areas of infarction. The appearance of the peritoneum and the adjacent organs, and the amount of serosanguineous fluid in the abdomen, are probably related to the size of the mass and the severity of the contiguous reaction.

The etiology is quite obscure and there seems to be no common predisposing factor. It occurs in either sex, at any age, and although obesity is usually present, several of the patients are described as definitely thin. Trauma, pressure, heavy work or unusual exertion are mentioned, but an equal number of cases give no such history. Venous congestion and thrombosis are present at some stage in the process but are the result rather than the cause. Some congenital anomaly and a combination of other factors such as active peristalsis and unusual physical activity of the patient seem to be the most plausible causes. Once the process is started, venous engorgement may well accentuate the torsion by the increase in the bulk of the distal portion.

Abdominal pain has been the one ever-present symptom. The onset is sudden. The pain is severe enough to prevent work and sleep; it is constant, non-radiating, non-peristaltic but with considerable variation in intensity. The severe pain of the onset slowly abates, only to become worse over a period of several days. It is minimal at complete rest in bed and aggravated by pressure or motion. It has usually been on the right near the umbilicus and its location has not changed. Nausea is more often absent than present, and vomiting is still less frequent, although in some instances it has preceded the pain. The bowels move as usual and active catharsis neither intensifies nor relieves the subjective symptoms.

Tenderness is the most frequent and most important physical sign. It is usually localized over the area of involved omentum, but at times the peritoneal reaction has extended to give more general tenderness with spasm. In the absence of marked spasm the mass of omentum may be palpated with the usual resulting diagnosis of appendix abscess, acute cholecystitis, or diverticulitis.

The oral temperature has been elevated one or two degrees and the white blood count in-

*Wallace—Assistant in Surgery, Massachusetts General Hospital and Harvard Medical School. Miller—Assistant Professor of Surgery, Harvard Medical School and Associate Surgeon, Massachusetts General Hospital. For records and addresses of authors see "This Week's Issue," page 853.

creased 4,000 to 8,000 above normal, with predominance of polymorphonuclear leucocytes. Other findings have been normal.

Although the diagnosis may be uncertain the story of persistent abdominal pain and the sign of abdominal tenderness will lead the experienced surgeon to the proper procedure of exploration. The presence of blood-tinged fluid in the abdomen should always suggest thorough inspection of the omentum and any involved portion should be entirely removed by ligation and section through normal omentum. Following this treatment the convalescence should be uneventful and the cure permanent.

Case I

Mass. General Hospital East Surgical 227015.

A thirty-two year old white male cook entered the Emergency Ward with the complaint of right lower quadrant pain of four days' duration. The patient worked until the day of entrance when the pain became somewhat more severe. The pain was chiefly below the umbilicus on the right side, but at times it spread across the hypogastrium to the left side. The bowels had moved three times since the onset. Pain was severe enough to prevent sleep during the three preceding nights. Physical examination showed the heart and lungs to be normal. The abdomen showed tenderness and spasm over the whole right side, without localization. Temperature 99°. Pulse 110. Respiration 35. Urine negative.

Preoperative diagnosis: ? acute appendicitis. ? acute gall bladder.

Operative note: Right rectus incision. Appendix normal but a mass was felt in the right upper quadrant. Incision extended upward. Gall bladder negative. A twisted mass of omentum was found which was apparently adherent to nothing in the abdomen. The neck was at the right portion of the transverse colon. The mass was clamped and excised. No drainage.

Convalescence was uneventful. The patient was discharged fourteen days after operation.

Case II

Mass. General Hospital East Surgical 267807.

A twenty-five year old white male shoe worker was admitted to the hospital with the following story. Two months previously, while out walking, he was seized with a severe "cramp-like" pain in his left upper quadrant which seemed to radiate through to his back. He was forced to sit down and was nauseated, but did not vomit. After three hours he felt perfectly well. He continued well until three days before entrance to the hospital when he had an acute pain of the same type in the same part of the abdomen. He slept poorly but the next morning the pain had subsided so that he was able to go to work. After three hours the pain recurred, became more intense and radiated from the left upper quadrant down across to the right lower quadrant. He felt weak and nauseated but did not vomit. He went home and slept all day, then he got up and ate a hearty supper. He slept poorly the past night and awoke in the morning with the pain more severe, and localized in his right lower quadrant. The pain had persisted with nausea but no vomiting. Bowels had moved daily until entrance.

Physical examination showed a robust young man with a flushed face, not appearing very ill, lying motionless in bed, apparently because of pain. Heart and lungs negative. Abdomen slightly distended, with marked spasm and extreme tenderness and hyperesthesia in the right lower quadrant. Rectal examination negative. Temperature 102.6°. Pulse 90. W.B.C. 13,000. Urine negative. Preoperative diagnosis: acute appendicitis.

Operative note: Right rectus incision. A dark red mass presented, which proved to be a mass of omentum five by three inches which had become twisted on a narrow pedicle, and was gangrenous. There was no fluid and there were no adhesions. The mass was excised and routine appendectomy performed. Wound closed without drainage. Uneventful convalescence. The patient was discharged on tenth day after operation.

Case III

Mass. General Hospital East Surgical 228372.

A thirty-five year old white American housewife entered the hospital with the history that two days before admission she had awakened with "soreness" in the epigastrium. This became steadily worse, with radiation but no nausea or vomiting. Food seemed to have no effect on the pain, which was never severe. For three or four years the patient had suffered from indigestion at about monthly intervals, lasting three or four days. She never had severe pain or distress and had always been relieved by vomiting. For two years she had been on a "gall bladder" diet. She never tried food to relieve the discomfort and never vomited blood or coffee ground material.

Physical examination showed a thin, poorly developed woman. Heart and lungs normal. Palpation of the abdomen revealed tenderness and spasm over the gall bladder. Temperature 100°. Respiration 20. W.B.C. 9,700. Urine negative. Graham test negative. Preoperative diagnosis: acute cholecystitis. Operative note: Gall bladder incision. Gall bladder soft and compressible with no adhesions or palpable stones. A tab of dark colored omentum five cm. long was found adherent to the stomach just above the pylorus; this, when separated, showed one complete twist. The most careful palpation failed to show any thickening of the stomach or duodenum. In view of the obvious damage of the omentum this was considered the primary disease. It was removed and the abdomen closed without drainage. Convalescence was uneventful. Patient discharged fourteen days after operation.

Case IV

Mass. General Hospital West Surgical 156388.

Torsion of the omentum in conjunction with an existing or preëxisting hernia, but having no connection with it.

The following case is not one of true primary torsion, but one of the McWhorter group of abdominal torsion unassociated with hernia, although a definite hernia was present.

A forty-eight year old male was admitted December 30, 1907. Three days before entrance he had slight abdominal pain which did not prevent him from going to work the next morning. During the forenoon the pain became worse and he became slightly nauseated and went home where he remained in bed until the morning of entrance. He noted that the pain had localized on the right side during the past 24 hours. At no time had he vomited. Bowels had moved normally. The patient gave a history of a small ventral hernia for twenty-five years and a bilateral inguinal hernia for five years, for which a truss had been worn.

Physical examination showed a well-developed and nourished man. Examination of chest, negative. Abdomen full and soft on the left, but slightly rigid on the right, tympanitic, with an indefinite palpable mass in the appendix region. Rectal examination was negative. Temperature 101°. Pulse 100. Respiration 20. W.B.C. 18,000. Urine negative.

Preoperative diagnosis: appendix abscess.

Operative note: Exploration revealed a hard omental mass which was rather red and dull in appearance. This mass was freed and was found to be an area of torsion of the omentum. It was clamped off and excised. It was adherent over the bladder but not in the inguinal ring. The appendix was not injected but was bound down by adhesions and was removed. No other abnormal condition was found and the abdomen was closed with two cigarette wicks in the pelvis. Convalescence was uneventful. Patient discharged seventeen days after operation.

Case V

Mass. General Hospital West Surgical 214070.

The following case with symptoms on the left side was one associated with a fibrous band, the patient's condition being mistaken for diverticulitis of the sigmoid.

The patient was a twenty-three year old white single male freight handler. Four days before admission he began to have slight pain in the left side which felt like a "stitch" and was enough to prevent him from working. The pain persisted with the same intensity and did not radiate. The bowels had moved daily. He was nauseated once but did not vomit. There was no history of hernia. Physical examination showed normal heart and lungs. The abdomen was soft, level, and tympanitic save in the left lower quadrant where there was a visible and palpable mass the size of an orange. Spasm and tenderness were present in this region. Temperature 100.2°. Pulse 100. Respiration 20. W.B.C. 13,000. Urine negative.

Preoperative diagnosis: Diverticulitis with abscess.

Operative note: Midline suprapubic incision. A large mass of strangulated omentum was found in the left lower quadrant where it was adherent to the parietal peritoneum and sigmoid. It was wrapped around a firm fibrous band which extended from the root of the mesentery to the left internal inguinal ring. The band was cut and the omentum delivered and found to have a pedicle twisted upon itself two complete turns. The diseased omentum was clamped off and excised. A normal appearing appendix was removed and the wound closed without drainage. Convalescence was uneventful and the patient was discharged thirteen days after operation.

Case VI*

This patient was a fifty-four year old man who had been perfectly well until two days before entrance, when he had generalized abdominal pain which persisted and became gradually worse, without nausea or vomiting. The pain had kept him awake all the preceding night. Temperature 98.6°. Pulse 90. Examination showed a well-developed and nourished man lying comfortably in bed. Heart and lungs were normal. The abdomen for the most part showed slight tenderness with very extreme tenderness and slight spasm in the right lower quadrant.

Preoperative diagnosis: Acute appendicitis.

Operation note: Right rectus incision. Free sanguineous fluid appeared in the wound with a mass of purplish black fat the size of a child's fist which proved to be a portion of the great omentum twisted upon itself three times. No cause for the torsion could be determined. The involved portion was tied off and removed. A slightly injected appendix was also removed, and the stump buried. Convalescence was uneventful.

Case VII*

A fifty-three year old single woman had a sudden sharp pain on the left side of the abdomen three days before entrance. She was nauseated but did not vomit. Her bowels had been constipated. The pain became steadily worse and the preceding night it was so severe that she required injections of morphine. On the evening of admission her temperature was 101° and W.B.C. 16,000. Urine negative. Physical examination showed a well-developed and nourished woman with normal heart and lungs, with definite tenderness and localized spasm on the left side of the abdomen half way between the costal margin and the crest of the ileum.

Preoperative diagnosis: Acute diverticulitis with abscess.

Operation. Ether anesthesia. Left rectus incision. Considerable free sanguineous fluid. In front of the main portion of the omentum there was an area of black gangrenous fatty tissue, four inches long, as thick as a man's forefinger, and twisted upon itself. Careful examination failed to reveal anything else in the abdomen. This was clamped off and removed. Convalescence was uneventful.

*Personal case of Dr. Miller.

Case VIII*

A fifty-year old single woman had been perfectly well until three days before entrance when she had severe pain over the lower abdomen, was nauseated and vomited. The pain persisted with little change. Temperature 99°. Pulse 100. W.B.C. not recorded. Physical examination showed the abdomen to be slightly distended, with tenderness across the lower portion. Pelvic examination revealed an irregular, boggy tender mass behind the cervix.

Preoperative diagnosis: Ovarian tumor with twisted pedicle.

Operation. Spinal anesthesia. Midline incision. Behind the uterus, which was normal, was the omentum, which was slightly adherent but was delivered without difficulty. The tip consisted of a gangrenous mass about the size of a large egg, the pedicle being twisted three times upon itself. The pelvic organs were normal. This necrotic mass was tied off and excised. The appendix, which was not remarkable, was easily removed. The wound was closed in layers. Convalescence was uneventful.

*Personal case of Dr. Miller.

SUMMARY

1. Eight cases of omental torsion are reported.

2. Such cases present signs and symptoms of localized peritonitis in any parts of the abdomen; in our series the lesions were found in both lower quadrants, in the pelvis, and in the right upper quadrant.

3. The clinical picture presents no characteristic or pathognomonic aspects, but in every case the indications have been clear that a condition was present which required surgical management.

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BALZAC'S ACCOUNT OF AMBROISE PARE AND THE LAST ILLNESS OF FRANCIS THE SECOND*

BY WILLIAM PEARCE COUES, M.D.†

INTRODUCTION

IT is of medical and historical interest to note that the incidents Balzac writes of in connection with the last illness of Francis II and Ambroise Paré occurred about seven years after Servetus was burned at the stake in Geneva by order of Jean Cauvin, a native of Picardy, known better to us as John Calvin and not often thought of as a Frenchman.

It is also to be noted that Calvin and Martin Luther both suffered from the Stone, and Balzac gives an account of Calvin's suffering from this, and other ailments, in the book on Catherine de Medici, from which I quote later.

Catherine, just after the events we are to hear of, sent émissaires to Calvin for a religious rapprochement (only for political ends) as her history shows, on St. Bartholomew's day and at Amboise.

The scenes of the young king's last illness and description of the notables of France at this time were never more graphically depicted than by the pen of the great French realist.

Catherine, the arch fiend, as many called her; Mary Stuart, the unhappy queen, later to be much more unhappy in Scotland; her maids of honor; the crafty Guises, ready to seize on the throne; Coligny, the admirable Admiral of unhappy fate on St. Bartholomew's Day; the pathetic young king, from whom Catherine withheld the chance of life; and last but not least, the noble figure of Ambroise, all appear, drawn to the life, in a style so vivid and trenchant that Balzac's word pictures, once read, can never be forgotten.

BALZAC'S ACCOUNT OF AMBROISE PARÉ, AND THE LAST ILLNESS OF FRANCIS THE SECOND, FROM "CATHERINE DE MEDICI"

Pp. 224-227

Chapter XI

Ambroise Paré

"Some days before the terrible end of the reign of Francis II, the King insisted on sailing down the Loire; wishing not to be in the town of Orleans on the day when the Prince de Conde was executed. Having yielded the head of the prince to the Cardinal de Lorraine, he was equally in dread of a rebellion among the townspeople, and of the prayers and supplications of the Princess de Conde. At the moment of embarkation, one of the cold winds which sweeps along the Loire at the beginning of winter gave him so sharp an earache, that he was obliged to return to his apartments; there he took to his bed, not leaving it again until he died. In contradiction of the doctors, who, with the exception of Chapelain, were his enemies, Ambroise Paré insisted that an abscess was formed in the King's head, and that unless an issue were given to it, the danger of death would increase daily. Notwithstanding the lateness of the hour, and the curfew law, which was sternly enforced in Orleans, at this time practically in a state of siege, Paré's lamp shone from his window and he was deep in study, when Lecamus, a furrier, called to him from below. Recognizing the voice of his old friend, Paré ordered that he should be admitted.

"You take no rest, Ambroise; while saving the lives of others, you are wasting your own," said the furrier, as he entered, looking at the surgeon, who sat, with opened books and scattered instruments, before the head of a dead man, lately buried and now disinterred, in which he had cut an opening.

"It is a matter of saving the King's life."

"Are you sure of doing it, Ambroise?" cried the old man, trembling.

"As sure as I am of existence. The King, my old friend, has a morbid ulcer pressing on his brain, which will presently suffuse it, if no vent is given to it, and the danger is imminent. But by boring the skull I expect to release the pus, and clear the head. I have already performed this operation three times. It was invented by Piedmontese, but I have had the honor to perfect it. The operation I performed was at the siege of Metz, on Monsieur de Pienne, whom I cured, and who was all the more intelligent in consequence. His was an abscess caused by a blow of an arquebuse. The second was on the head of a pauper, on whom I wanted to prove the value of the audacious operation Monsieur de Pienne had allowed me to perform. The third I did in Paris, on a gentleman who is now entirely recovered. Trepanning—that is the name given to the operation—is very little known. Patients refuse it, partly because of the imperfections of the instruments, but I have at last improved them. I am practicing now on this skull, that I may be sure of not failing to-morrow when I operate on the head of the King."

"You ought indeed to be very sure you are right, for your own head would be in danger in case——"

"I'd wager my life I can cure him," replied Ambroise, with the conviction of a man of genius. "Ah, my old friend, where's the danger of boring into a skull with proper precautions?

*Read at the Annual Meeting of the Boston Medical History Club, April, 1932.

†Coues—For record and address of author see "This Week's Issue," page 853.

That is what soldiers do in battle every day of their lives, without taking any precautions."

"My son," said the burgher boldly, "do you know that to save the King is to ruin France? Do you know that this instrument of yours will place the crown of the Valois on the head of the Lorraine, who calls himself the heir of Charlemagne? Do you know that surgery and policy are at this moment sternly opposed to each other? Yes, the triumph of your genius will be the death of your religion. If the Guises gain the regency, the blood of the Reformers will flow like water. Be a greater citizen than you are a surgeon; oversleep yourself tomorrow morning, and leave a free field to the other doctors, who, if they cannot cure the King, will cure France."

"I," exclaimed Paré, "I leave a man to die when I can cure him? No, no! Were I to hang as an abettor of Calvin, I shall go early to court."

"Alas, my friend," returned Lecamus, "the little King has refused the pardon of the Prince de Conde, to the princess. Do not kill your religion by saving the life of a man who ought to die."

"Do not you meddle with God's ordering of the future!" cried Paré. "Honest men can have but one motto, (*'Fais ce que dois, advienne que pourra'*) do thy duty, come what will! That is what I did at the siege of Calais when I put my foot on the face of the Duc de Guise.—I ran the risk of being strangled by his friends and his servants, but today I am surgeon to the King. Moreover, I am of the Reformed religion; and yet the Guises are my friends. I shall save the King!" cried the surgeon, with the sacred enthusiasm of a conviction bestowed by genius, "and God will save France!"

. . . . . .

P. 229

A Description of the King's Room

"The solitude in which the King's house was left had a powerful effect on the mind of the Duc de Guise when, on his return from an inspection, made by way of precaution, through the city, he found no one there but the friends who were attached exclusively to his own fortunes. The chamber, in which was the King's bed, adjoined the grand hall of the Bailliage. It was at that period panelled in oak. The ceiling, composed of long, narrow boards carefully joined and painted, was covered with blue arabesques on gold ground, a part of which being torn down about fifty years ago, was instantly purchased by a lover of antiquities. This room, hung with tapestry, the floor being covered with a carpet, was so dark and gloomy that the torches hardly threw any light."

"The vast four-post bedstead, with its silken curtains, was like a tomb. Beside her husband, close to his pillow, sat Mary Stuart, and near her the Cardinal de Lorraine. Catherine was seated at a little distance. The famous Jean Chapelain, the physician on duty (who was afterwards chief physician to Charles IX), was standing before the fireplace. The deepest silence reigned. The young King, pale and shrunken, lay as if buried in sheets, his pinched face scarcely showing on the pillow. The Duchesse de Guise, sitting on a stool, attended Queen Mary, while on the other side, near Catherine, in the recess of the window, Madame de Fiesque stood watching the gestures and looks of the queen mother; for she knew the dangers of her position. . . ."

P. 231

"I have been watching that Italian woman," said the Cardinal, "as she sits there with absolute insensibility. She is watching and waiting, God forgive her, for the death of her son; and I ask myself whether we should not do a wise thing to arrest her at once; and also the King of Navarre." . . .

P. 235

"Well, Monsieur?" said the Duc de Guise, interrogatively (to the physician).

"I dare not take upon myself to apply the blister to draw the abscess," he replied. "Maitre Ambroise has promised to save the King's life by an operation, and I might thwart it."

"Let us postpone the treatment until to-morrow morning," said Catherine coldly, "and order all the physicians to be present, for we all know the calumnies to which the death of kings give rise."

She went to her son and kissed his hand, then she withdrew to her own apartment.

"With what composure that audacious daughter of a shop-keeper alludes to the death of the dauphin, poisoned by Monteguechuli, one of her Italian followers!" said Mary Stuart.

"Mary," cried the little King, "my grandfather never doubted her innocence."

"Can we prevent that woman from coming here to-morrow?" said the queen to her uncles in a low voice.

"What will become of us if the King dies?" returned the Cardinal, in a whisper. "Catherine will shovel us all into his grave."

"Thus the question was plainly put between Catherine de Medici and the house of Lorraine, during that fatal night. The arrival of the Connétable de Montmorency and the Chancelier de l'Hôpital were distinct indications of rebellion; the morning of the next day, therefore, would be decisive."

P. 237

Chapter XII

Death of Francois II

"On the morrow the queen-mother was the first to enter the King's chamber. She found

no one there but Mary Stuart, pale and weary, who had passed the night in prayer beside the bed. . . .

The deepest silence reigned in the King's chamber. Catherine, accompanied by Madame de Fiesque, went to the bedside and gazed at her son with a semblance of grief that was admirably simulated. She put her handkerchief to her eyes and walked to the window where Madame de Fiesque brought her a seat. Thence she could see into the courtyard. . . ."

P. 240

"Ambroise Paré had by now examined the King's head; he thought the moment propitious for his operation; if not performed suffusion would take place and Francois II might die at any moment. As soon as the Duke and Cardinal entered the chamber, he explained to all present the cause of the King's illness. stating that in so urgent a case it was necessary to trepan the head, and he now waited till the King's physician ordered him to perform the operation."

"Cut the head of my son as though it were a plank,—with that horrible instrument!" cried Catherine de Medici. "Maitre Ambroise, I will not permit it."

The physicians were consulting together, but Catherine spoke in so loud a voice that her words reached, as she intended they should, beyond the door.

"But, Madame, if there is no other way to save him," said Mary Stuart, weeping.

"Ambroise," cried Catherine, "remember your head will answer for the King's life."

"We are opposed to the treatment suggested by Maitre Ambroise," said the three physicians. "The King can be saved by injecting through the ear a remedy which will draw the contents of the abscess through that passage."

"The Duc de Guise, who was watching Catherine's face, suddenly went up to her and drew her into the recess of the window. "Madame," he said, "you wish the death of your son, you are in league with our enemies, and have been since Blois. This morning the Counselor Viole told the son of your furrier that the Prince de Conde's head was about to be cut off. That young man, who, when the question was applied, persisted in denying all relations with the prince, made a sign of farewell to him as he passed before the window of the dungeon. You saw your unhappy accomplice tortured with royal insensibility. You are now endeavoring to

P. 241

prevent the recovery of your eldest son. Your conduct forces us to believe that the death of the dauphin, which placed the crown on your husband's head, was not a natural one, and that Montegucchuli was your——"

"Monsieur le Chancelier!" cried Catherine, at a sign from whom Madame de Fiesque opened both sides of the bedroom doors.

The company in the hall then saw the scene that was taking place in the royal chamber: the livid little King, his face half dead, his eyes sightless, his lips stammering the word "Mary" as he held the hand of the weeping queen; the Duchesse de Guise motionless, frightened by Catherine's daring act, the Duke and Cardinal, also alarmed, keeping close to the queen-mother and resolving to have her arrested on the spot by Maille-Breze; lastly, the tall Ambroise Paré, assisted by the King's physicians, holding the instrument in his hand but not daring to begin the operation for which composure and silence were as necessary as the consent of the other surgeons.

"Monsieur le Chancelier," said Catherine, "the Messieurs de Guise wish to authorize a strange operation upon the person of the King. Ambroise Paré is preparing to cut open his head. I as the King's mother and a member of the council of the regency,—I protest against what appears to be a crime of lese-majeste. The King's physicians advise an injection through the ear, which seems to be efficacious and less dangerous than the brutal operation proposed by Paré."

When the company in the hall heard these words, a smothered murmur rose from their midst, the Cardinal allowed the Chancellor to enter the bedroom, and then he closed the door.

"I am lieutenant general of the kingdom," said the Duc de Guise, "and I would have you know, Monsieur le Chancelier, that Ambroise, the King's surgeon, answers for his life."

"Ah, if this be the turn that things are taking," exclaimed Ambroise, "I know my rights

P. 242

and how I should proceed." He stretched his arm over the bed. "This bed and King are mine. I claim to be sole master of this case and solely responsible. I know the duties of my office. I shall operate upon the King without the sanction of the physicians."

"Save him," said the Cardinal, "and you shall be the richest man in France."

"Go on," cried Mary Stuart, pressing the surgeon's hand.

"I cannot prevent it," said the Chancellor, "but I shall record the protest of the queen-mother."

"Robertet," called the Duc de Guise.

When Robertet entered, the lieutenant-general pointed to the Chancellor. "I appoint you Chancelier of France in the place of that traitor," he said. "Monsieur de Maille, take Monsieur de l'Hôpital and put him in the prison of the Prince de Conde. As for Madame," he added, turning to Catherine, "your protest will not be received; you ought to be aware that any such protest must be supported by sufficient

force. I act as the faithful subject and loyal servant of King Francois II, my master. Go on, Ambroise," he added, looking at the surgeon.

"Monsieur de Guise," said l'Hôpital, "if you employ violence, either upon the King or on the Chancelier of France, remember that enough of the nobility of France are in the hall to rise and arrest you as a traitor."

"Oh, my lords," cried the great surgeon, "if you continue these arguments you will soon proclaim Charles IX, for King Francois is about to die."

Catherine de Medici, absolutely impassive, gazed out of the window.

"Well, then, we shall employ force to make ourselves masters of this room," said the Cardinal, advancing to the door. But when he opened it, even he was terrified. The whole house was deserted. The courtiers, certain now of the death of the King, had gone in a body to the King of Navarre.

"Well, go on and perform your duty," cried Mary Stuart, vehemently, to Ambroise. "I—— and you, Duchesse," she said to Madame de Guise, "will protect you."

"Madame," said Ambroise, "my zeal was car-

P. 244

rying me away. The doctors, with the exception of my friend Chapelain, prefer an injection, and it is my duty to submit to their wishes. If I had been chief surgeon and chief physician, which I am not, the King's life would probably have been saved. Give that to me, gentlemen," he said, stretching out his hand for the syringe, which he proceeded to fill.

"Good God!" cried Mary Stuart, "but I order you to——"

"Alas, Madame," said Ambroise, "I am under the direction of these gentlemen."

The young queen placed herself between the surgeon, the doctor, and the other persons present. The chief physician held the King's head, and Ambroise made the injection into the ear. The Duke and the Cardinal watched the proceedings attentively. Robertet and Monsieur de Maille stood motionless. Madame de Fiesque, at a sign from Catherine, glided unperceived from the room. A moment later l'Hôpital boldly opened the door of the King's chamber.

"I arrive in good time," said the voice of a man whose hasty steps echoed through the great hall, and who stood the next moment on the threshold of the open door. "Ah, Messieurs, so you meant to take off the head of my good nephew, the Prince de Conde? Instead of that, you have forced the lion from his lair, and—— here I am," added the Connétable de Montmorency. "Ambroise, you shall not plunge your knife into the head of my King. The first prince of the blood, Antoine de Bourbon, the Prince de Conde, the queen-mother, the Connétable, and the Chancelier forbid the operation."

To Catherine's great satisfaction, the King of Navarre and the Prince de Conde now entered the room.

"What does this mean?" said the Duc de Guise, laying his hand on his dagger.

"It means that in my capacity as Connétable, I have dismissed the sentinels of all your posts, *tête Dieu!* You are not in an enemy's country, methinks. The King, our master, is in the midst of his loyal subjects, and the states-general must be suffered to deliberate at liberty. I carried the protest of my nephew de Conde before that assembly, and three hundred of those gentle-

P. 245

men have released him. You wish to shed royal blood and to decimate the nobility of the kingdom, do you? Ha! in future I defy you, and all your schemes, Messieurs de Lorraine. If you order the King's head opened, by this sword that saved France from Charles the Fifth, I say it shall not be done!"

"All the more," said Ambroise Paré, "because it is too late, the suffusion has begun already."

"Your reign is over, Messieurs," said Catherine to the Guises, seeing from Paré's face that there was no longer any hope.

"Ah, madame, you have killed your son," cried Mary Stuart, as she bounded like a lioness from the bed to the window and seized the queen-mother by the arm, gripping it violently. . . .

P. 246

"My dear," replied Catherine, giving her daughter-in-law a cold, keen glance, in which she allowed her hatred, repressed for the last six months, to overflow, "you, to whose inordinate love we owe this death, you will now go to reign in your Scotland, and you will start tomorrow. I am regent de facto." The three physicians, having made her a sign, "Messieurs," she added, addressing the Guises, "it is agreed between Monsieur de Bourbon, appointed lieutenant-general of the kingdom by the state-general and me, that the conduct of the affairs of the State is our business solely. Come, Monsieur le Chancelier."

"The King is dead!" said the Duc de Guise, compelled to perform his duties as Grand-master.

"Long live King Charles IX!" cried all the noblemen who had come with the King of Navarre, the Prince de Conde, and the Connétable.

The ceremonies which follow the death of a King of France were performed in almost total silence. When the King-at-arms proclaimed aloud three times in the hall, "The King is dead!" there were very few persons present to reply, "Vive le roi!"

Another victim of Catherine's inordinate ambition, her own son, had gone to his rest.

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COMMENCEMENT ADDRESS*

BY SOPHIE C. NELSON, R.N.†

IT seems to be the fashion in speeches, or talks, or papers today to take on an introspective view on a subject and to call your address something like "The Doctor Looks at the Public", "The Public Looks at the Patient", etc., so it is fitting if I were to dignify this address tonight by a title that I should follow suit, and I might call the remarks that I am about to make to you "The Nurse Looks at Herself."

On the basis of twenty years' experience in nursing as I look in retrospect over my career, there are certain things to which I wish I had given more thought; certain emphasis that I wish I had placed on subjects that at the time seemed relatively unimportant. Curiously enough, the things to which I should like to have given more definite consideration are not so much in relation to the technical aspect of my education as in relation to the opportunities that I might have made for myself, and the emphasis that I might have placed on things which would have more adequately equipped me to do the task for which I had been self-designated.

First, I should take a different point of view about my nursing education. In my day as well as in your day, it is fair to assume that if you enter a good school of nursing you at least get the technical and scientific knowledge that is the best available for your time and day. It is given to you in the method acceptable as the standard of education for your time and for your type of education. Most nurses, however, on the eve of their Commencement, consider that they have achieved their goal. To be sure, they have in a measure. Graduation is a goal that has been attained when you look back over three years of training. However, too many nurses consider it a permanent goal. In view of this, the first consideration that I should like to give or have given to myself is to change my thinking in relation to that and make my Commencement not a goal but a point of departure.

I had, as you have, a certain technical equipment. I considered it, as many of you may consider it, sufficient for the time being, but no education is sufficient. The information and the knowledge that we have relative to the treatment and the care of the human being and the information we have relative to human conduct change, and almost immediately when we depart from the portals of any educational institution, we must begin to revamp the education we have, sometimes to change our minds, and to begin right away to get further information. So I should like to ask you to look at yourself as I wish I had looked at myself, and remember that what information you have today becomes obsolete tomorrow and that you must begin right away on a plan of practice that keeps you well informed in relation to the changing scientific facts which are of benefit to you in your profession and which keep you up-to-date in relation to your technical knowledge and equipment which are so essential to the care of the patient and the cure, retardation, and prevention of disease.

There are many methods which are worth while that make for the betterment of the nurse. All of these, as it were, are the responsibility of the nurse to the human being. One takes on himself or herself a responsibility for what you do with yourself, what equipment you have, or what you make of your profession. In other words, from now on, it very definitely is up to you, and nothing is more pathetic than the alibi of older nurses in relation to what they could have accomplished had they seen or had some one told them of certain things which were necessary to continue the performance. Twenty years later, you will probably look at yourself as I do tonight and wonder whether you have made the most of all of those things which were essential for your self-development and the promotion of yourself as a professional person.

The next subject to which I wish I had given more consideration pertains to that quality called personality. Like many other words, personality has had its meaning cheapened through too frequent and inexact use. Numerous definitions and ideas of personality are used for one purpose or another, though all interpretations are not equally satisfactory. I prefer to think of personality as a possession more or less easily changed.

To view this interesting self of ours, we must, so to speak, stand aside, so that we may view it physically, mentally, and perhaps spiritually. If we want to develop our personality to its utmost, we must immediately acknowledge our weak points, but we must conversely admit our good qualities, and then try to proceed to build upon the desirable while at least we erase the undesirable by constantly working toward some ideal standard for ourselves.

It is an important function in the duties of every nurse to develop personality. As we believe that character is simply organized personality, it is probably no exaggeration to say that every individual has as many personalities as there are sides to his character. We expect a great deal of other people but, curiously enough, we often say about ourselves that we are adults and that there are certain things

*Peter Bent Brigham Hospital School of Nursing, November 18, 1932.

†Nelson—President, National Organization for Public Health Nursing. For record and address of author see "This Week's Issue," page 853.

about our characters that are impossible to change. Not so at all. We can definitely hope to change some of our personality qualifications so that we may become much better individuals. We reach a great many people through our profession and almost invariably we reach them in a very personal way. Much of our effort, much of our efficiency and much of our production revolve around our ability to adapt ourselves to other people, to the exigencies of their situation, and very much depends upon our attitude toward persons or the problems we have at hand.

We must exhibit, for instance, constant congeniality and friendliness. We must be prepared to get up at two o'clock in the morning in as kindly an attitude and with as willing a spirit as we exhibit at four o'clock in the afternoon. We must assume a friendliness and understanding toward all people because, of course, we cannot hope to accomplish anything unless we make people realize that we are with them in the spirit of helpfulness. Perhaps one of the most necessary qualifications is our kindliness because, along with what we hope is an adjustable personality, kindliness is the key to a nurse's success.

We meet many difficult situations. We often wonder whether that which we are trying to do is good. Every individual seeking to lead a worth-while life some time or other asks himself this. Nurses as a group are particularly interested in the answer to this question because there are so many inherent difficulties in their work, and it makes evaluation difficult. However, looking on the bright side of everything and taking the proper attitude bring out the faculty of being adjustable to situations often trying to the nurse. Another thing in relation to personality that seems important for a nurse to develop is a sense of humor, because in trying and difficult situations certainly that very often saves one's reason, or at least one's disposition.

The next acquisition to which I wish I had given more consideration as I have gone along is a thing which for want of better words I shall call "my conversation". Now conversing, the dictionary tells us, is to be familiar by study, well-informed, and well-versed. Consequently, real conversations are concerned with topics of higher interest.

If we are to follow the trend of the day which is, particularly in nursing, that more emphasis is being placed upon what we know than upon what we do, that is, more emphasis is placed on our ability to teach the precepts of healthful living and to teach people the prevention of illness, as well as to use our technical skill in helping an individual recover from a disease. We must be conversant with all that is best and all that is newest and all that is known of scientific information about the cure and prevention of disease.

We are told that we know more than we do. We are told that there is information locked up in the minds of medical men, in scientific laboratories and libraries, which, if it could be disseminated among the population, would revolutionize the health of our country. However, the problem seems to be to get that information so that it becomes the everyday working knowledge of the so-called man of the streets. Perhaps no person is in a better position to do this than the nurse who, through the individual care of the patient or the contacts made with the many patients that have hospital and public health nurses, is given an opportunity which she must seize. Through our conversation, we can spread actual knowledge in relation to the principles of health building and disease prevention.

The definition implies that if we are good conversationalists we know our subject well; meaning that we know it well enough to speak with conviction, that we try to make our subject interesting, and that we attract attention thereby not to ourselves but to the subject, that we are able to hold the attention of our audience, and that we give our information in such a way that, if it is not entertaining, it is at least interesting and instructive. It implies further that a good conversationalist listens well and takes the other fellow's interest into consideration, and in no vocation in the world is this more important than in nursing. It implies lastly that you leave something behind you. In our education of the patients, and this will assume more importance in the future than it has in the past, it is necessary that we leave something in relation to the principles of health and hygiene with the individuals with whom we have been in contact.

So it is important for every nurse to be a good conversationalist, and I wish I had spent a good deal more time in consideration of that factor. First, it does a good deal for the patient and secondly, it also does something for you. It indicates that you have read widely, that you have been observing, that you are familiar with a broad range of subjects, and that you are an interesting individual.

One of the things for which nurses have been tremendously criticized is the fact that we see our functions and our objectives out of all proportion to the whole need. We concentrate on the things that interest us so that we lose a true perspective. This criticism has some foundation. Another matter to which I should like to have given further attention is study of the background in relation to the subjects with which I was most concerned; to have learned certain facts in relation to what I was doing that would have made the work more interesting, more intelligible, more helpful to

others and also to me. All things must have a background.

We are all perfectly familiar with the technique employed by the movies to produce two different effects. First, the method of producing a sense of time, space, and sequence by taking separate sets, each depicting some event of weeks, months, years, or centuries prior to the narrative of the story. Then a clever editor clips, glues, and produces the continuity of the film which gives proportion, appreciation, and understanding to the story. The other method of production, which is equally familiar, is the "close-up" wherein some single detail is thrown upon the screen in exaggerated concentration. The setting completely vanishes, the background is absent, and there is no relationship to the part of the picture that has preceded and what may follow.

Unfortunately, it is this latter technique, that of the "close-up", which we are much too apt to employ to the end that we hold our thinking of the health need as a whole, concentrate upon some detail of it and lose the balance and vision that are so necessary in the advancement of the health of the individual or group. So I would commend to you, as I wish I had done myself, that you become greater students of the many problems that affect the welfare, particularly the health, of the individual, and to study the history and the background of medicine and nursing. It is an interesting story. Much of it reads like fiction. It will add life and vigor and interest to your thinking and, consequently, to your production.

If I had my nursing life to live over again, I would develop an interest in an avocation. I should not do as many of my contemporaries and I myself have done, practically concentrate and devote my entire thought, time, and living to a vocation. This cramps one's ability; it makes one stale; it acts conversely to what one had hoped to do, which is to make us more adequately fitted for the task at hand. Nursing is an excellent vocation but, like all vocations, it must have some diversion in order to be most useful. Consequently, I would urge you to do what I wish I had done to a greater extent, develop some outside interest, preferably unrelated to the vocation you have selected. It is very important in relation to the results that we hope to get out of living because, after all, although you are starting on a vocation by which you hope to make a living, you have also started on a road through which you hope to make a life.

It is as important for your contribution to your patient as for the development of yourself to have an interest which gives you a certain outside perspective and which makes it possible for you entirely to leave the intensity of the task which you are performing as a vocation and to get a respite which should give you peace, recreation, and enjoyment, and make you come back to the problem at hand much more of a "human being" and much better fitted for that which you have undertaken to do. I cannot speak of this too strongly because I think in this age in which we are living, which is a very trying, a very harassing, a very busy, and a very complicated one, it is important for the development of the individual—and whatever is important for the development of the individual is important for the betterment of the race—that we take ourselves away from the things upon which we are concentrating hour after hour, and get from some other source rest and refreshment and we hope something new spiritually which makes us much better servants of the public than we would have been without it.

Lastly, I would urge you to cultivate your abilities. As you travel the path of your vocation, you will find that you have some special aptitude, either inherent or acquired. Encourage it, because by the cultivation of your special gift you will find that you will make a greater contribution than in any other way. Learn to do something in relation to your vocation just a little better than some one else. The human satisfaction that it gives us, the satisfaction of that mental state called our ego, takes the sting out of many difficult places. All life is difficult. In all walks of life, it is difficult to make and maintain a high estimate of ourselves and of human behavior. Of nurses especially is this true. With our observation and experience with human infirmities and failures, we find it hard to hold fast to faith in human nature, so there is no satisfaction greater than being able to do something extraordinarily well yourself, for thereby a great benefit is conferred.

Develop all that is best in you; all that is possible. What we do with life is one thing; what life does with us is quite another. Consequently, we have to meet many exigencies, both in relation to those which pertain to work and those which react on us, so it is important to muster, as it were, for battle, all our resources, all our gifts, to put our shortcomings as far in the background as we can and strive with what we have, to do the very best we can. We cannot all be Florence Nightingales or Clara Bartons, but each of us in our particular way can help to make a contribution not only to the prolongation of life, which we are told is our objective, but also to the much more important factor of adding life to people's years as well as years to their lives.

If you muster to the best of your ability all your talents, all your gifts, and everything that is best within you to the purposes to which you are dedicating yourselves, I am sure that when you reach the pearly gate and knock at Heaven's door, you may not get a harp and a crown but St. Peter will let you in because you have worn a cap and a gown.

REPORT OF THE SCHOOL OF NURSING OF THE PETER BENT BRIGHAM HOSPITAL*

BY CARRIE M. HALL, R.N.†

THERE appeared in the *Boston Herald* a few weeks ago an editorial on the overcrowding of several professions and consequent unemployment, mentioning particularly law, teaching and nursing. It quoted the following figures about nursing—that trained nurses had increased during the decade 1920 to 1930 at the rate of 97%, while the total population had increased at the rate of only 16%. The editor might have gone on to say, bringing the picture nearer home, that in Massachusetts the percentage of increase in trained nurses in the last decade was 86%, while the increase in population was 10%.

The editorial was based without doubt upon figures published early this year by the Committee on the Grading of Schools of Nursing, whose work has been mentioned annually in these reports for the past five years. In 1928 the Grading Committee made statistical estimates of the numbers of nurses there would be in 1945 and 1965 on the basis of production at that time. The predictions were so ridiculed that the graphs were relegated to obscurity. This year they have been brought out again because they are already fulfilled. Unhappily, Massachusetts and the District of Columbia have already exceeded the predictions for the year 1965.

Some of these comparative figures were sent out in a letter in June, 1932, to more than 7000 hospital trustees, hospital superintendents and Superintendents of Nurses by the Committee on Distribution of Nursing Service of the American Nurses Association. The letter was signed by the Presidents of the three national nursing associations, of whom Miss Nelson, our guest this evening, is one, and carried the endorsement of those associations. The letter called attention to the responsibility of the hospitals of the country for the present oversupply of nurses. It urged the wider use of graduate nurses in hospitals, with a corresponding decrease in the use of student nurses for carrying the hospitals' nursing loads.

As a result of this appeal, the reports of the Grading Committee, and other publicity, a number of hospitals in different parts of the country have closed their schools. Some have limited enrollment to one class a year. A few in Massachusetts have closed their schools. Probably more ought to, but in the main the plea to hospital boards has fallen upon deaf ears. Their job is to run the hospital as economically as possible, and a school of nursing helps to do that.

For five or six years nurses have been saying that the profession is overcrowded, that enrollment should be limited and standards raised, but they have been saying these things chiefly to audiences of nurses. Other women, like myself, have tried to sow a few seeds in the public mind on occasions such as this. We have to thank the Grading Committee for presenting the facts about nurses and nursing in such a fashion as to stimulate editorial comment. There must be much more widespread awakening to the situation and more drastic reductions in numbers and size of schools before any real impression will be made upon the oversupply.

Other publicity, also, has been given to the problem of overproduction. In a speech some months ago (before the presidential campaign) Governor Roosevelt said with relation to teachers that this "oversupply" would not exist if we had "the wit and the foresight to tell" the teachers that their profession is "gravely oversupplied". In commenting on this editorially in the *New York Herald Tribune*, Walter Lippman said—"telling young women that a profession is overcrowded will not keep them out of it". "If Governor Roosevelt is going to 'plan' the supply of teachers, he will have to do more than 'tell' things to young men and women. He will have to make it difficult for them to enter Normal Schools by raising requirements, by fixing quotas, or by some other device which will rule out the excess number."

I agree with Walter Lippman that you have to do more than "tell" things to young women. I am afraid that it will be a long time before the economics of the individual will be a real factor in reducing the supply. Never in the history of this School have there been so many girls wanting to enter. They come for interviews, and look coldly at me when I describe overproduction and unemployment, and if they make any response at all to my graphic picture, it is to say that "it is just the same in every field, and that in three years' time (the end of the course) things will be different". What they do not say is that the nursing school, unlike most other schools, provides a living for the three years, which the student pays for by her services.

I regret that we have made no material change in our policies. Our quotas of entering students have always been limited. We have stiffened the entrance requirements. We try constantly to make more careful selection of students. I may call attention to the fact that our graduating class is smaller this year than last. Again I regret to say that it is not due to change of

*Presented at the Graduation Exercises, School of Nursing, November 18, 1932.

†Hall—Principal, School of Nursing of Peter Bent Brigham Hospital. For record and address of author see "This Week's Issue," page 853.

policy. Even with our best efforts at selection, the shrinkage of classes is great. This class of 1932 entered at 59 and graduates 34, while the 1933 class entered with 63 and now has 30 members. What becomes of those who are eliminated or who eliminate themselves, I do not know.

It may be appropriate at this time to know what those who have been graduated are doing. The School has had a birthday this month. On November 7 it was 20 years old. It has not quite attained a majority, but is old enough to demonstrate its worth. Many of our women are doing interesting and useful types of work and filling important positions. Five hundred and fifty-eight nurses have been graduated, but the time has passed in which to reckon success by quantity. It is to the quality of the product that one must look for success or failure. The figures which I shall give are approximate, for we have not full information at hand concerning each alumna, but they are sufficiently accurate to give a fairly good picture of the group.

I will give the vital statistics first. Two hundred and twenty-six are married, or about forty per cent. Seven have died. Of the married group 22, so far as we know, are continuing their work, not quite ten per cent of that group. There are about 50, or nearly nine per cent, who are either at home, unemployed, or occupation not known. We wish graduates woud keep us advised of changes of positions and of addresses. There are six in foreign fields. Five are anesthetists. Seven are studying at Teachers College, Columbia University. Three are on faculties of colleges. Two are office nurses. Two have become nuns of different orders, each continuing her nursing work. At least five have taken up other occupations, of whom one is in social service, one renting rooms, one managing an inn, one selling insurance, and one is said to be a professional golfer.

There are left the three great groups in nursing; institution, private duty and public health. There are in institutional work 115 or over twenty per cent. In this group have been listed all those workers, including superintendents of hospitals, principals of schools of nursing, assistants, instructors, supervisors, operating room and dispensary workers, head nurses and floor duty nurses. They are in all parts of the country, from east to west and north to south. At least eight are principals of schools of nursing, and eight are teaching.

In the public health field are found 47 or eight per cent. Some are with visiting nurse associations, some are school nurses, a few in the industrial field, a goodly number with the Community Health Association here in Boston, and several working under Red Cross auspices.

In the private duty field are included those nurses who go into homes and those who special individual patients in hospitals. Here are found about 100, or a little over seventeen per cent. In the country at large about fifty-four per cent of nurses are in the private duty group, so that our figures of seventeen to eighteen per cent are interesting, because it is this group which suffers most in this time of stress from unemployment and irregular work. Those nurses who are doing institutional and public health nursing and receiving regular salaries, however small, are those whose economic security seems assured at present. Last year I said from this platform that the hospital had not a single vacancy to offer a member of the graduating class. Of that class four are married, ten have secured positions in public health nursing and at least five are doing institutional jobs. Twelve we know are in private duty. The remaining eleven have not kept us informed. It is apparent that there is demand for some of our nurses. It is equally obvious that upwards of twenty-five per cent of our women are struggling against the tide of unemployment.

There are some cheering thoughts about us as a profession and concerning our work. We are knowing more actual facts about nursing service and nursing education than we used to know. The public also is beginning to know more about us. This is due chiefly to the work of the Grading Committee which will complete its program next year. Other agencies are also at work. The Committee on Distribution of Nursing Service has made its report. The National League of Nursing Education has set up a bureau of studies. A book has been published on time studies in nursing and a job analysis. A few cost studies have been made. More are needed. With these many facts at our disposal and these helpful agencies set up, it should be possible to arouse public opinion and interest to the point of understanding, to bring about some means of a reduction in supply, putting the emphasis on quality rather than quantity production.

POSTGRADUATE COURSE FOR NURSES IN TUBERCULOSIS

Dr. Sumner H. Remick, Superintendent of the Middlesex County Sanatorium at Waltham, has inaugurated a six months' course in tuberculosis for graduate nurses.

The course consists of lectures, ward duty under supervision, operating room training and visits to other institutions.

On March 6, Dr. Philip P. Jacobs of the National Tuberculosis Association lectured to the nurses on "The Control of Tuberculosis in the United States." On March 13, Frank Kiernan, Executive Secretary of the League, lectured on "The Plan of State and County Organization." On March 20, Miss Bernice W. Billings, R.N., Executive Secretary of the Boston Tuberculosis Association, lectured on "Boston's Volunteer Work in Tuberculosis."—*The Massachusetts Health Journal.*

MEDICAL PROGRESS

PROGRESS IN PEDIATRICS

BY JOHN LOVETT MORSE, M.D.*

THE PARATHYROIDS

AS it is evident from the current literature that an epidemic of parathyroid disease is starting in this country, it seems worth while to attempt to summarize briefly what is really known about the parathyroids and their function. Quoting from Collip—"The function of the parathyroid apparatus, in so far as we understand it at present, is that of a regulator of calcium metabolism. This function is apparently directed toward the maintenance of a definite level of total calcium in the circulating plasma and is subserved by the action of the internal secretion elaborated by the glands." It is not positively known whether the parathyroid hormone affects both the diffusible and the nondiffusible portions of the serum calcium, i.e., that not combined and that combined with protein or, if it affects only one, which one? The weight of evidence seems to show, however, that it affects only the diffusible portion. Its characteristic influence depends to a certain extent also on the presence of an adequate supply of vitamin D. Conversely, under normal conditions the effect of vitamin D appears to be dependent on a normal supply of the parathyroid hormone, although in the absence of this hormone a characteristic effect may be obtained with very large doses of vitamin D and foods containing much calcium.

In order to understand and appreciate the action of the parathyroids on the calcium metabolism it is necessary to know something as to the normal calcium metabolism. Assuming that most of my readers do not have any more accurate knowledge on this subject than I had before I began to look the matter up, I shall attempt, with due apologies to Peters and Van Slyke, and Trumper and Cantarow, whose works I shall quote freely, to sum up from the clinician's standpoint some of the main facts as to the normal calcium metabolism as it is related to the action of the parathyroids.

The only source of the calcium in the body is the calcium ingested in the food. The amount of calcium absorbed varies directly with the amount of calcium in the food, but above a certain level an increase in the amount of calcium in the food results in a progressively diminishing increase in absorption. It is practically impossible to raise the concentration of serum calcium far above normal by feeding calcium salts or foods containing large amounts of calcium. The form in which the calcium is ingested influences its absorption, varying directly with the solubility of the given salt. An increase of phosphates in the food diminishes absorption by forming insoluble calcium phosphates. Poor utilization of the fat in the food prevents absorption as the fat combines with the calcium. Acidity of the intestinal contents favors the absorption of calcium. (An argument in favor of lactose in infant feeding.) Some believe that the chief effect of the antirachitic factor (vitamin D and ultraviolet light) is to increase the absorption of calcium from the intestinal tract. Others that its main activity is exerted in the intermediary metabolism of phosphorus and calcium. The evidence is conflicting and it is impossible at present to draw any positive conclusions.

The calcium in the food is absorbed in the small intestine. A part of that which is absorbed is reëxcreted in the large intestine. The fecal calcium is, therefore, made up of unabsorbed calcium and reëxcreted calcium. That part of the absorbed calcium which is not reëxcreted in the lower bowel or retained passes out of the body in the urine. In early life only about five per cent is excreted in this way.

The calcium in the body is in the bones, the soft tissues and the blood. The soft tissues contain comparatively small amounts. The blood cells are practically devoid of calcium, the whole of that in the blood being in the serum. The concentration is very constant in the given individual under physiologic conditions. In early life it varies between 10 and 11.5 mg. per 100 cc. Somewhat less than one half of this calcium is combined with proteins and is, therefore, nondiffusible and physiologically inactive. Hypocalcemia due to a diminution in this portion of the serum calcium does not provoke tetanic or rachitic manifestations. This portion of the serum calcium is also probably not affected by the parathyroid hormone. It is evident, therefore, that serum calcium values cannot be properly interpreted unless both protein and phosphates are simultaneously determined or known to be normal. Low calcium with low protein or high phosphate has an entirely different significance from a low calcium with normal protein and phosphate.

That portion of the calcium which is combined with protein is generally believed to be nonionized, as is somewhat more than one half of the remainder. "The concentration of calcium ions in the blood appears to be dependent upon several factors, the most important of which are the hydrogen-ion, bicarbonate-, and phosphate-ion concentrations. The concentration of calcium ions decreases as the bicarbonate- and phosphate-ion concentrations increase and as the hydrogen-ion concentration decreases, and vice versa." These facts are, however, not so im-

*Morse—Professor of Pediatrics Emeritus, Harvard Medical School. For record and address of author see "This Week's Issue," page 853.

portant when considering the action of the parathyroid hormone as they are in interpreting the causation of tetany.

The parathyroid hormone mobilizes the calcium stores of the body into the blood. As the soft tissues contain but comparatively small amounts, this calcium must be withdrawn from the bones, the only other source. It is evident, therefore, that an increase in the parathyroid secretion will withdraw an excessive amount of calcium from the bones and thus do harm. It is also evident that, while the exhibition of parathyroid extract will relieve infantile tetany due to low serum calcium by increasing the serum calcium at the expense of the calcium in the bones, it is an irrational form of treatment except as a temporary expedient, because it tends to increase the rickets usually associated with it. It is equally evident that a diminution in the parathyroid secretion, by interfering with retention in the blood, will cause the storing up of calcium in the tissues, especially in the bones. In general, if the calcium of the blood falls below seven mg. per 100 cc., tetany will develop. It must not be forgotten, however, that tetany will not develop at seven mg., if the low calcium is due to the loss of calcium with protein, as in nephrosis. It must also not be forgotten that there are other factors besides the parathyroid hormone which influence the amount of calcium in the body and its distribution between the bones and serum. For example, low calcium diets may not only deplete the bones of calcium but also lower the level of the serum calcium. Acidosis mobilizes the calcium of the bones into the serum and causes increased excretion of calcium. Excessive amounts of vitamin D may also cause hypercalcemia.

It is sometimes stated that parathyroid extracts are effective when given by mouth as well as when given intravenously or subcutaneously. Collip, however, states that pepsin and trypsin destroy their activity. He says also, "All our attempts to devise some effective method of oral administration of the hormone have met with complete failure." It would seem reasonable to accept this statement as final. He found experimentally in the dog, which is the only animal suitable for such studies, that with excessive doses of the hormone hypercalcemia develops. The symptoms in order of appearance are anorexia, vomiting, diarrhea, muscular weakness, lassitude, respiratory distress, passing of blood by the bowel, bloody vomit and finally complete collapse. The blood calcium rose to 20 mg.; at 15 mg. the phosphorus also began to rise. There was rapid failure of kidney function. The NPN and urea of the blood were much increased. Acidosis developed toward the end. There was much calcium in the kidneys and an excess in the heart muscle. Experimental chronic parathyroid hypercalcemia resulted in serious depletion of the calcium stores and a condition of metastatic calcification of certain soft tissues in association with nephrolithiasis.

Within the last few years it has been definitely shown that generalized osteitis fibrosa cystica (Recklinghausen's disease) is the result of chronic hyperparathyroidism. In the vast majority of cases this has been associated with hypertrophy or tumors of the parathyroids. Improvement or cure has taken place after the removal of the parathyroids. Treatment with the x-rays is associated with some danger and must be regarded as still on trial. At any rate it should be used only in mild cases and should not be persisted in unless improvement is definite and rapid. Hitzrot and Comroe report a case in which the symptoms were relieved by removal of the parathyroids, although they were not enlarged and microscopically did not show hyperplasia. The pathologic changes in the blood in these cases are essentially the same as in the experimental animals, except that the blood phosphorus is low and there is an increase in the phosphatase. Collip suggests that the low blood phosphorus explains why man survives in this condition while experimental dogs die. It must be remembered that while the discovery of the cause and cure of this disease is epoch-making, it really is not a common condition, approximately only one hundred cases having been reported up to this time. Many more will undoubtedly be recognized, however, in the future. It is, moreover, relatively uncommon in early life. Landon has recently reported one in a child of two and one half years.

Lowenburg and Ginsburg reported recently a case of acute hypercalcemia as the result of the administration of excessive doses of parathyroid extract and calcium gluconate by mistake for six days to a five year old boy for the control of hemorrhage. The first symptom was vomiting, which persisted. On the third day he became listless and responded slowly to questions. The general physical depression increased. Finally he became very lethargic, was unable to sit up and made practically no voluntary movements. His temperature was high and irregular. The blood calcium was 19.6 mg. per 100 cc. and the serum phosphorus 4.4. Recovery, with return of the serum calcium to 10 mg., which it was before the treatment was begun, occurred after the medication was omitted. This case shows that the parathyroid hormone is not without danger, that it must be used carefully and thoughtfully and that the symptoms of an excessive dose must always be kept in mind.

It is interesting, in the light of our recently acquired knowledge as to the symptomatology of a large excess of the parathyroid secretion, to surmise what would be the symptoms of a slight or moderate increase. How much has it

to do with the causation of arteriosclerosis and stones in the kidneys? How many people are listless, apathetic and generally below par because of it? What are the early signs in the bones or what other diseases of the bones may it cause? Camp has described some of the early changes in the bones. It is certainly not the cause of osteomalacia, in which the serum calcium is never high, often normal or low. It is not the cause of the changes in the bones which occur late in long-continued cases of indigestion, "celiac disease", in which the serum calcium is low as the result of the diminished absorption of calcium from the intestines. It is not the cause of rickets, because the serum calcium is never high and not infrequently low in this disease. Furthermore, it is well known that rickets is due to a lack of the antirachitic vitamin and can be cured when it is given.

Certain authors have advised the removal of the parathyroids in the treatment of various diseases of the bones and joints in which there is an excessive deposit of calcium. This seems entirely irrational because the removal of the parathyroids interferes with the removal of calcium from the bones and favors its retention in them.

I suspect that a slight or moderate increase in the secretion of the parathyroids has very little to do with the etiology of arteriosclerosis or of stones in the kidneys and that such an increase also has very little to do with listlessness, apathy and poor general condition. Nevertheless, I expect that in the not far distant future many such symptoms will be attributed to it and that a certain number of normal parathyroids will be needlessly removed. The result will be, of course, that the last state of these patients will be worse than the first. If these symptoms could only be attributed to a diminution in the secretion of the parathyroids, it is certain that there would be a tremendous increase in the sale of parathyroid extracts, as it is much simpler to use a syringe than to perform a difficult surgical operation. A safe rule to follow in deciding whether any given symptoms are due to hypersecretion of the hyperthyroids is to have an examination of the blood as to its phosphorus, protein and hydrogen-ion concentration as well as to its calcium content.

It has been known for some years that, after removal of the parathyroids, tetany develops. The same thing happens when they are injured. This is due, of course, to the lowering of the diffusible portion of the serum calcium as the result of the loss of the mobilizing function of the parathyroid hormone. Tetany develops as a rule when the total serum calcium is below seven mg. per 100 cc.

It seems reasonable to believe that under certain circumstances, resulting from injury or disease, the secretion of the parathyroids may be diminished but not abolished, that is, a condition of hypoparathyroidism is developed. It also seems reasonable to believe that, other things being equal, there would be a reduction in the diffusible serum calcium with a storing up of calcium in the bones and possibly in the other tissues, and an increase in the serum phosphorus. It is again interesting to surmise what the symptoms of such a condition would be. Collip states that in adults, lesions of the ectodermal tissues are produced, such as cataract, brittleness and ridging of the nails and enamel defects of the teeth. It would seem very difficult to be sure in any given case whether the cause of such manifestations was hypoparathyroidism or something else. It hardly seems reasonable at present, however, to treat cataracts with the parathyroid hormone or to place treatment in the hands of the manicurists. It is easy in infancy to attribute a low serum calcium, whether or not associated with tetany, to a deficiency of the secretion of the parathyroids. This explanation is hardly satisfactory in the vast majority of instances, however, because there are always so many other factors, such as the diet and the amount of available vitamin D, involved.

Tetany develops not very infrequently in babies with rickets. It does not develop in that type, which is by far the most common, in which the serum calcium is normal or nearly normal and the phosphorus low. It occurs only in the type in which the calcium is low, regardless of the amount of phosphorus. It is easy to assume when tetany develops in these cases that there is a deficiency of the parathyroid hormone, especially since the administration of parathyroid extract will relieve the symptoms. That this is not the case, however, is shown by the fact that regulation of the diet and supplying the antirachitic vitamin will relieve the symptoms, and also cure the underlying rickets. While parathyroid extract will relieve the symptoms of tetany in these cases, it should be regarded only as a temporary expedient to relieve them until the cause is removed by proper treatment by diet and vitamin D. It acts, of course, by mobilizing the calcium of the bones into the serum, and tends to produce a negative calcium balance. Another fact which counts against hypoparathyroidism as the cause of tetany in association with rickets is that the tetanic symptoms can be relieved equally well by chemicals which increase the hydrion concentration of the blood, hydrochloric acid, ammonium chloride, or calcium chloride. These chemicals, like the parathyroid hormone, do not reach the underlying condition and should be regarded only as temporary expedients.

Parathyroid extract has been used in the treatment of nephrosis, presumably because of the low serum calcium in this condition. In this condition, however, the serum calcium is low because of the loss of the nondiffusible, non-

ionized calcium in combination with albumen in the urine. Parathyroid extract cannot be expected to have any action on this portion of the serum calcium. It can only increase the diffusible portion, not combined with albumen, by mobilizing calcium from the bones. It does not seem as if this would be of any benefit, as this portion is little, if at all, lowered. If it were, tetany would develop, which it never does. Nevertheless, cases of nephrosis have been reported in which the edema has been materially diminished after the administration of parathyroid extract. Others have had no favorable results from its use. If it does do good in some cases, its action must be connected in some way with calcium metabolism and the relation between calcium and edema, which is very difficult for anyone but a chemist to understand. However that may be, favorable results in certain cases do not show that this condition is due primarily to a deficiency of the parathyroid function. If it were, remarkable results would be obtained in every case.

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WARNS AGAINST COATED LAXATIVES

Many different kinds of sugar-coated or chocolate-coated laxatives, put up in such a way as to resemble chewing gum or candy, are on the market today and careless use of some of them is injurious to children or adults, according to Dr. F. J. Cullen, Federal Food and Drug Administration. These laxatives come in various forms, such as pressed fruits, mints, small cubes, or lozenges, sometimes brightly colored, and are packaged attractively. Practically all of them contain phenolphthalein, a drug known to injure the tissues of the liver. There is an additional danger in excessive consumption of these tablets, especially by children, in that an individual might get an overdose which would be injurious to health.

"Coated laxatives are nearly always correctly labeled as being laxatives or cathartics, therefore medicines," says Dr. Cullen, "but the likelihood of a child reading the label is small. Even some adults do not take the precaution to scrutinize statements made on labels and mistake the laxatives for confections. The Federal Food and Drug Act requires that a laxative prepared in chewing gum or confection form be labeled to indicate that it is a medicine, not a confection."

Laxatives are useful in the temporary relief of constipation. But there is danger of injury to the intestinal tract through the formation of the laxative habit. The intensity of the effect of cathartics varies from mild to extreme, a small quantity of one producing results as intensified as a large quantity of another. Generally, the effects vary markedly with different individuals.

Although the Food and Drug Act does not require that a manufacturer declare the presence, in a drug product, of any but a few specified drugs, such as alcohol and narcotics, it does insist that if any constituent is named, the statement be truthful. The law does not require that the presence of phenolphthalein in a drug preparation be stated upon the label. For this, and other reasons, Dr. Cullen strongly urges parents to keep cathartics and all other medicines out of the hands of children. — *U. S. Department of Agriculture, Office of Information, Press Service.*

MORTALITY RATES

Telegraphic returns from 85 cities with a total population of thirty-seven million for the week ending April 1, indicate a mortality rate of 11.3 as against a rate of 13.5 for the corresponding week of last year. The highest rate (19.4) appears for Denver, Colo., and the lowest (6.8) for Flint, Mich. The highest infant mortality rate (20.0) appears for Wilmington, Del., and the lowest for Cambridge, Mass., Miami, Fla., New Haven, Conn., Schenectady, N. Y., Somerville, Mass., and Utica, N. Y., which reported no infant mortality.

The annual rate for 85 cities is 12.3 for the thirteen weeks of 1933, as against a rate of 12.7 for the corresponding period of the previous year.— *Bulletin of the Bureau of the Census.*

CASE RECORDS
of the
MASSACHUSETTS GENERAL HOSPITAL

ANTE MORTEM AND POST MORTEM RECORDS AS USED IN WEEKLY CLINICAL-PATHOLOGIC EXERCISES

EDITED BY RICHARD C. CABOT, M.D.
F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 19161

SWELLING OF ONE EYELID AND MUSCLE PAINS

MEDICAL DEPARTMENT

An Armenian housewife thirty-two years old was sent into the hospital for diagnosis and treatment of a disorder of the right eye. Her physician reported that she had now been ill with grippe for a week with a temperature of 100° to 102° and "all the typical grippe symptoms." The left eye had been enucleated at a local hospital a year previously after a similar case of grippe.

The patient's complaint on entry was swelling of the right upper eyelid and muscle pains.

For years she had eaten raw chopped meat and for six months Italian sausage, often lightly cooked. A month before admission and again nine days before admission she ate more of this. After it she noted immediate burning in the epigastrium and chest. Beginning eight days before entry for two days she vomited everything she took by mouth. At the same time she had considerable pain in the muscles of her limbs on motion. Seven days before entry she had some swelling of the right upper eyelid and slight photophobia. The following day she had more nausea and vomiting. The swelling of the eyelid had subsided by the time of entry but the pain in the muscles had persisted. For nine days she had felt very feverish and her bowels had been constipated.

Physical examination showed a slightly obese, dark skinned woman in apparent discomfort. There was vitiligo, especially on the chest and arms. The left eye was artificial. There was slight puffiness of the right upper eyelid. There was slight tenderness over both antra and mastoids. The heart was not enlarged. There was a soft apical systolic murmur. The rate was 120, the rhythm regular. The sounds, pulses and arteries were normal. The blood pressure was 98/66. The lungs and abdomen were normal. There was marked tenderness of the muscles of the extremities, chiefly of the flexors, especially the biceps. The pupils and fundi were normal. The patient had too much pain to permit testing the reflexes.

The urine showed a specific gravity of 1.024 to 1.032. All of four specimens showed 2 to 10 white blood cells per field and many eosinophiles. The first specimen was loaded with eosinophiles. Blood examination showed 36,900 to 16,500 white cells, 62 to 46 per cent polynuclears, 32 to 54 per cent eosinophiles. The hemoglobin was 55 to 60 per cent, the red cells 5,777,000. Two smears showed slight achromia, slight irregularity in size and shape, many smudge cells. A Hinton test was negative. The smear of her husband's blood showed no eosinophiles; her daughter's showed one in 100 white cells.

For the first week the temperature was 98.7° to 104.1° with wide daily swinging, afterwards 97.3° to 100.6°. The pulse was 103 to 137. The respirations were normal except for one rise to 28 the day of the biopsy.

X-ray examination of the chest showed a moderate degree of lateral curvature of the spine with displacement of the mediastinal contents towards the right. There was also some retraction of both apices. There was no evidence of consolidation in the lung fields. The hilus shadows were moderately increased. The outline of the diaphragm was sharply defined on both sides. Its respiratory movements were somewhat limited. The heart shadow was not remarkable.

The patient continued to be uncomfortable, making little improvement for the first week. On the ninth day a biopsy was done.

CLINICAL DISCUSSION

DR. RICHARD C. CABOT: Of course there is no such thing as "typical grippe symptoms" and therefore it should be in quotation marks.

In general if we see people with swollen eyelids and we don't know why, what unusual diseases do we think of?

A STUDENT: Trichiniasis.

DR. CABOT: Yes. You may go for a lifetime and not see a case, and then if you do see one and recognize it you are *the* person in that town or that village for a time, because nobody else will think of it. The trichinae get into some relation to the eyelids whereby they stop circulation. Sometimes the whole face is swollen, sometimes other portions of the body too. I have no doubt that is why they are talking here in the history about uncooked meat, sausage, etc. Nine days before admission she had eaten some of this meat and the next day she began to vomit.

"She had considerable pain in the muscles of her limbs on motion." That of course brings the same diagnosis into any one's mind, though any fever also makes the limbs sore.

We should expect both eyelids to be swollen if it had anything to do with trichiniasis, and we do not expect photophobia, though a conjunctivitis can go with trichiniasis, and so, I suppose, photophobia.

The blood pressure is rather notably low, but that has not in itself any diagnostic significance. Tenderness of the muscles is a little more

characteristic of trichiniasis than mere pain, but again we can say almost any acute general infection can give us muscular tenderness.

I take it they had stained up the urinary sediment, which is an unusual thing to do, looking for eosinophiles, which they found, 32 to 54 per cent. That undoubtedly made them sit up and take notice. What are some of the other diseases that give eosinophilia?

STUDENT: Asthma. Food allergy. Echinococcus.

DR. CABOT: Yes, some food allergies do and echinococcus does, and some skin diseases and some cases of Hodgkin's disease. But I do not think there is any disease that gives so many eosinophiles in the blood.

DR. TRACY B. MALLORY: Also periarteritis nodosa.

DR. CABOT: Periarteritis nodosa, that rare disease of which most of us have never seen more than one case in our lives. This is the first I knew of its producing an eosinophilia.

DR. MALLORY: It does not necessarily, but about one-third of the cases have a high eosinophile count.

DR. CABOT: We have a high total count of leukocytes, so that 54 per cent is a tremendous increase.

"Many smudge cells." That depends a good deal on how you happen to make your smear. I do not think it means anything in particular, put down in this way.

"Her husband's blood showed no eosinophiles." Whether he had eaten any of this material we do not know. The daughter's count of course is nothing.

I take it at this point they made a diagnosis of trichiniasis. Everything points that way and nothing in particular points any other way. The only queer thing is swelling in *one* eyelid. It is usually in both. After this the usual thing is to go for the biceps and see if we can get a trichina out. Some patients are interested in that, some are not; some we try to get interested in it.

The chart shows a really big temperature and a big swing such as we get with a septic process, and after that very little. But there were several days when it was above 101° all the time. The pulse was moderately high.

The curvature of the spine, I suppose, has nothing to do with this case.

"The hilus shadows were moderately increased." Most x-ray men do not say much when we get no more than that.

"The respiratory movements of the diaphragm were somewhat limited." Why do you suppose they put that in? The trichinae get into the diaphragm sometimes. They are more obvious there than anywhere else. Sometimes they get encapsulated or sometimes calcified. Finding calcified trichinae postmortem is sometimes quite a revelation. Whether in this case trichinae had any connection with the restriction of the diaphragmatic movements I do not know.

I am going to say she had trichiniasis, so now I do not see why we should not hear what this biopsy showed.

DR. MALLORY: We found them.

FURTHER HISTORY

The pathologic report on the piece of muscle removed for biopsy was trichiniasis. Several unencapsulated worms were seen.

The patient gradually improved. The temperature subsided to a maximum of 100°. The eosinophile count came down to 18 per cent. Nineteen days after admission the patient was discharged.

FURTHER DISCUSSION

DR. CABOT: "Unencapsulated" means they had not been there very long?

DR. MALLORY: Yes.

DR. CABOT: The longer they had been there the more likely they would have been to be making themselves at home, building a nest, which we call "encapsulated."

DR. HENRY D. STEBBINS*: After the biopsy her temperature subsided, and although it never returned to normal before discharge, she was subjectively perfectly well after that. Her temperature became normal on the eleventh or twelfth day after she was discharged improved.

When blood smears were made of the whole family one daughter examined was found to have 24 per cent eosinophiles. So far as we could ascertain, the whole family had partaken of the sausage. The daughter had symptoms the next day, being nauseated at the same time her mother was. She was the only other member of the family who was ill after eating the sausage.

DR. CABOT: In any epidemic of trichiniasis we find a large number of people who have eosinophilia and presumably trichiniasis, but without any symptoms. That is, it is the people who have more of it or who are more sensitive who come to us as manifest cases. I think that distinction between the presence of disease and manifest disease is one which we do not make often enough. In relation to tuberculosis most people now recognize manifest and non-manifest disease. The latter can be found only if we happen to take an x-ray, or postmortem. I think that distinction is true of the great majority of diseases. We can have a manifest or a non-manifest disease which depends on our getting at it in some way other than through the patient's complaints.

I have nothing in particular more to say about this case. It is striking how much better she was after the biopsy. It seems to be

*Senior interne on the East Medical service.

the only treatment mentioned. I do not know if anything else was done. Of course there is is no treatment in this disease. We just wait for nature to cure. Death is very rare.

DR. MALLORY: I have never seen a death. I know that they occur.

DR. CABOT: I do not believe this patient was cured. I think she will have more symptoms later. Ordinarily they have muscular stiffness for a good deal longer than muscular pain.

DR. MALLORY: It is an interesting question for speculation whether the first attack for which her eye was enucleated a year before may not have been the same disease.

DR. MAURICE FREMONT-SMITH: Would that mean a second ingestion? You cannot get spread from trichinae that are in your body?

DR. MALLORY: Yes. Once they become encysted they do not spontaneously get out.

A STUDENT: Did the rather low hemoglobin have anything to do with trichiniasis?

DR. CABOT: I think not. I have never seen any anemia from it. I do not know whether she had it. I think this is a pretty typical case, although a good many people would not have thought of the diagnosis as the staff here did.

DR. MALLORY: In connection with periarteritis nodosa: that is supposed to be an extremely rare disease, but in five years now we have had four cases of it and only eight of trichiniasis. In three of the four cases of periarteritis nodosa the eosinophilia was above 30 per cent. Two out of the four were biopsied for a question of trichina infection, because those cases often have very severe muscular pain and might not be distinguishable from trichiniasis. The diagnosis is ordinarily fairly easily made by biopsy if they happen to get the right blood vessel. Ordinarily cases of periarteritis nodosa die. One of our cases here recovered, and there are numerous reported cases in the literature. It is one of the diseases which we are beginning to learn are not so rare as supposed. Perhaps we are making the diagnosis in milder cases now and they recover.

DR. FREMONT-SMITH: What are the clinical symptoms at the onset?

DR. MALLORY: It all depends on which blood vessels happen to be hit. I have seen cases start as bronchial asthma. Acute polyserositis is another form, involving the pericardium, the pleura and the peritoneum; and malignant hypertension when the vessels in the kidney are involved is another. Sometimes it seems to hit first the vessels in the intestinal tract, and cases have been operated on for acute intestinal obstruction, acute appendicitis and things of that sort. There are cases reported in which the liver was involved and which have been diagnosed as acute yellow atrophy.

DR. CABOT: You think it would be shown to be an infection?

DR. MALLORY: I think without any question at all. An exactly similar infectious disease has been reported in deer in the Black Forest in Germany. It is very well recognized there.

DR. FREMONT-SMITH: Have they the organism?

DR. MALLORY: I do not believe they have the organism, but the epidemic character makes it certain it is infectious.

DR. RICHARD C. CABOT'S DIAGNOSIS

Trichiniasis.

DIAGNOSIS (FROM HOSPITAL RECORD)

Trichiniasis.

CASE 19162

BILATERAL DEAFNESS, TINNITUS AND ATAXIA

NEUROLOGICAL AND NEUROSURGICAL DEPARTMENTS

PRESENTATION OF CASE

DR. FREDERICK J. C. SMITH:* A twenty-three year old American housewife entered the hospital with the chief complaints of ringing in the ears, headaches and impaired hearing of three years' duration.

Three years before admission she first noticed ringing in the left ear, and she thought her hearing became less acute. At the same time her vision was somewhat impaired, and she had periods of dizziness with generalized headaches. Both legs were somewhat weaker than previously. One year before entry she developed a persistent pain behind the right ear. Four months before admission she began to have attacks of nausea and vomiting occasionally accompanied by severe generalized headaches and dizziness. Three months before entry she became unsteady on her feet. The dizziness and unsteadiness were progressive. Five weeks before admission she developed a knife-like pain over the left frontotemporal region, followed in a few days by a numbness of the left side of her face and a sensation of pins and needles in her left arm and hand and left anterior chest. One week before entry this sensation appeared in the right hand. All her symptoms gradually progressed so that at entry she was completely deaf in both ears and had a marked staggering gait.

Family history. Her father died of pulmonary tuberculosis at twenty-nine years of age.

She gave a past history of inability to turn her left eye laterally since childhood.

Neurological examination revealed a visual acuity of 20/30 in both eyes. The fields were

*Interne on the Neurosurgical service.

roughly normal. The fundi showed blurred disk margins in both eyes with one diopter elevation. The extraocular movements were all normal except for a left external strabismus with a left lateral rectus paralysis. The muscles of mastication all functioned, although there was weakness of the left pterygoid muscles. The jaw was deviated slightly to the left. The nasolabial fold was less prominent on the left than on the right and all facial motions were less distinct on the left side. Bilateral deafness was present with only slight bone conduction. The tongue deviated slightly to the left, showing no atrophy or fibrillation. The motor system showed general weakness on both sides. There were no pathologic reflexes, although the reflexes were somewhat hyperactive on both sides. Sensory examination was negative except for left trigeminal involvement. Romberg's sign was positive, being more marked with the eyes closed. There was a marked staggering gait, but no more to one side than to the other. The head was carried somewhat to the left in order to avoid diplopia.

X-ray of the skull showed both auditory canals enlarged in the midportion and with changes in density consistent with bilateral tumors.

Preparation was immediately made for a combined ventriculolumbar puncture. This was performed and showed an initial pressure in the left ventricle of 250 and in the lumbar region of 220. The dynamics were normal. The total protein was 11 in the ventricular fluid, 170 in the lumbar. Wassermann tests on the blood and on the spinal fluid were negative.

Operation was performed. The convalescence was uneventful. One month later a second operation was performed. The patient's condition became unsatisfactory during operation, so it was decided to postpone further exploration. The first day after operation the temperature rose to 103°, pulse 140, and she was semicomatose. She remained in this condition for the next four days. On the fifth day she appeared brighter and was beginning to talk and to recognize people. The chart remained unchanged. On the sixth day she developed rather sudden pulmonary edema and died.

Clinical Discussion

Dr. George W. Holmes: The most interesting part of the x-ray examination in this case was the change in the internal auditory canals. This dark area represents a very much dilated internal auditory canal. As we are not accustomed to seeing a dilatation on both sides we were somewhat confused and thought the appearance might be due to an error in technic. Another confusing thing was that on the side showing the greatest deformity by x-ray there was less in the way of symptoms. The mastoid cells were also examined; they were essentially negative.

A lateral view of the skull was negative except for calcification in the region of the pineal gland, a rather large area of calcification in the midline, not displaced from the region where the pineal should be.

A Physician: Is there evidence of increase in intracranial pressure there, should you say?

Dr. Holmes: That is a very difficult question to answer from the x-ray. There is a considerable variation in the normal. In this case I should think there was not enough variation to say that there was definite evidence of pressure.

Dr. John S. Hodgson: On the basis of the clinical history and examination and the x-ray findings we made a preoperative diagnosis of bilateral acoustic neuroma. I believe we have not seen this before.

The first operation was done in the hope of finding a tumor in the left cerebellopontine angle. A tumor about the size of a small olive was found high up and I was unable to determine what attachment it had. Much to my surprise while working around it I found that the tumor came out rather easily *in toto*. That is very unusual for an acoustic neuroma, which is attached to the eighth nerve and usually extends to the meatus and into the auditory canal. Usually the capsule of the tumor is incised and the tumor is removed piecemeal.

The patient did well, and about a month later a second operation was performed, over the right cerebellopontine angle in the hope of finding a similar growth. As Dr. Holmes has shown you, the shadow on the right side was larger than the one on the left. The clinical signs however were less numerous on the right side than on the left. At the second operation intracranial pressure was much greater than previously and the attempt at exposure more difficult. Bleeding was difficult to control and I had to give up without finding the tumor. The patient died six days after the second operation.

The autopsy findings, about which Dr. Kubik will speak, were very interesting. On the left side where I had operated there were two more tumors. They were smaller than the one I had removed, one of them the size of a small white bean, the other the size of a kidney bean. One involved the seventh nerve and the other the eighth nerve. I did not see the brain when it was taken out. Dr. Kubik said he did not see a tumor implicating the fifth nerve, although she had symptoms indicating such involvement.

On the right side there was a single very large tumor that seemed to involve the eighth nerve. Between the cerebral hemispheres about half way back on the right side involving the dura and the longitudinal sinus was a large tumor of the same type which lay approximately in contact with the upper end of the Rolandic

area. Anterior to that was another similar very small tumor, springing apparently from the dura and not from the arachnoid. There may have been others, but those are the ones we know about.

Then we removed the spinal cord and to our surprise found there were tumors there, one which lay at the level of the left seventh posterior nerve root, a rather large tumor, and another lower down at about the left seventh thoracic level. In retrospect we could see that these two probably accounted for her first symptoms,—pins and needles sensations in her left hand and in her left chest.

The diagnosis is multiple neurofibromata. She did not appear to have anything more external or peripheral than that. The involvement seemed to be intraspinal and intracerebral.

DR. W. JASON MIXTER: I think Dr. Hodgson has covered this case very thoroughly. I have nothing to add except that I saw him remove the first tumor and I think that both of us should have been suspicious of the type of tumor with which he was dealing on account of the fact that it was enucleated so easily, because acoustic neuromas do not come out in this way.

There is one large series of bilateral acoustic neuromas which was reported by Frazier some years ago in a familial group somewhere in the State of Pennsylvania. They found in this family a large number of cases with presumably bilateral acoustic neuromas. In most of these cases the diagnosis was made on the history, in a certain number on postmortem examination or at operation.

CLINICAL DIAGNOSES (FROM HOSPITAL RECORD)

Bilateral acoustic tumors, neurofibroma.

ANATOMIC DIAGNOSES

Multiple neurofibromata of the acoustic nerve, the brain and the spinal cord.

PATHOLOGIC DISCUSSION

DR. CHARLES S. KUBIK: The tumor which was removed at the first operation contains nerve fibers, a fact which identifies it as a neurofibroma. The cellular structure of the others is a good deal the same, even that of the meningeal tumor, but so far we have not found nerve fibers in them.

DR. HOLMES: Was there anything to account for the calcified shadows we see in the x-ray?

DR. KUBIK: A mass attached to the choroid plexus has calcium deposits in it. It is not in the midline but very near it, just over the thalamus.

A PHYSICIAN: What was the biopsy report on the first tumor?

DR. KUBIK: It was neurofibroma.

Microscopic section of a neural tumor reveals interlacing fibrillar bundles. The nuclei are long and slender, and occasionally form palisades. The meningeal tumor has a somewhat similar structure. There are no well developed whorls such as are usually found in arachnoid fibromas. It is not clear whether it is to be regarded as meningeal fibroblastoma or neurofibroma of the dura.

In multiple neurofibromatosis or von Recklinghausen's disease there may also be glial or ependymal tumors, or microscopic lesions which have been variously regarded as developmental defects or beginning neoplasms. The existence of such lesions has not been ruled out in this case. It is more than possible that more careful study will disclose further anomalies.

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FEEBLE-MINDEDNESS AND THE FUTURE

AMONG the dangers that threaten our civilization, there is one which is developing steadily yet insidiously, the extent of which is unknown to most of us. Feeble-mindedness is increasing at an alarming rate.

A brief summary of the situation is given by Weld A. Rollins in the Massachusetts Law Quarterly for February, 1933. Mr. Rollins reviews "Human Sterilization" by Landman, and adds a number of pertinent facts which he has gathered from various sources.

There are in this country, it appears, over four hundred thousand patients in hospitals for nervous and mental diseases; one out of two hundred and ninety people in the United States is a patient in such an institution. In Massachusetts there are twenty-five thousand patients in the State's hospitals for the mentally afflicted. In 1930, according to the Director of the Division of Mental Deficiency in Massachusetts, 11.9% of the pupils entering the public schools of Massachusetts were retardates, of whom 4.6% were mentally defective and 6.3% were retardates not mentally defective. In the twenty-seven year period, 1904-1930, the insane in Massachusetts public and private hospitals have increased 112%, and the number of patients in schools for the mentally defective has increased 438%. In the United States as a whole, the ratio of feeble-minded and epileptic patients per one hundred thousand of total population has risen from 17.5% in 1904 to 53.1% in 1928.

This relative increase is due chiefly to two factors. Feeble-mindedness not of traumatic origin is an inherited characteristic, and the number of children born to mothers of mental defectives and retardates is almost twice the number born to mothers of children who are sufficiently intelligent to attend high school and college. Parents of the latter group barely perpetuate themselves; those of the mentally defective group reproduce themselves twice over. There is good reason to believe that feeble-mindedness is a characteristic of the mendelian recessive type. That is, an individual, although not feeble-minded himself, may be a carrier of feeble-mindedness and able to transmit it to his children.

It is estimated that there are at least ten million such carriers of feeble-mindedness in the United States. About 11% of the feeble-minded of any generation come from the mating of the feeble-minded of the previous generation, while 89% of them come from matings between the carriers.

The burden on society resulting from this increase of feeble-mindedness is tremendous. For one thing, persons with subnormal intelligence are always potential criminals; of five hundred and sixty-one persons accused of felony examined by the Massachusetts Department of Mental Diseases, 21½% were found to be "clearly or suggestively abnormal mentally".

The financial loss to the country is appalling. Including both the direct cost of supporting these sufferers from mental disease and the loss of productive capacity due to their incompetence, Doctor Horatio N. Pollack of the New York Department of Mental Hygiene computes the annual total cost of mental disease for the United States as around three-quarters of a billion dollars.

Such a situation may well give us food for thought. The remedy is not apparent. Sterilization of defectives, which is practiced extensively in California, may be advisable in a limited number of cases, but this measure will by no means solve the problem. Landman suggests that state boards of Eugenics and Euthenics should be formed to study the ques-

tion. Something may be gained from the dissemination of knowledge of contraceptive measures, but unfortunately those who should not have children are least likely to employ voluntary contraception.

We should at least recognize this danger that threatens to replace our population with a race of feeble-minded; we must study its causes and the sources from which it springs. If we wait too long, this viper that we have nourished may prove our undoing.

MEDICAL EDUCATION ABROAD AND AT HOME

THE letter of Dr. Francis G. Benedict, appearing on page 857 of this issue, will relieve some of the apprehension expressed in the editorial of this *Journal* of March 30 last, but there are definite indications of a modicum of truth in the expectation of having physicians who are educated abroad apply for registration in Massachusetts in considerable numbers.

Although Dr. Benedict was impressed by the appearance and spirit of many of these students, there may be a lower stratum even among these groups, as is sometimes found in most medical schools. It is well known that hundreds of young persons desirous of practicing medicine are unable to secure admission to the medical schools of the United States and are studying abroad. It may happen that some, and it is a reasonable fear that there will be a considerable number, will not be able to qualify for examination in most of the states of this country and yet can meet the low requirements of the present Massachusetts law.

If rejected in other states, it would be reasonable to expect that such disappointed doctors will regard this Commonwealth as a possible resource. Under such circumstances Massachusetts will be the choice, for most graduates wish, and some will need, to get into practice as soon as possible.

Massachusetts will not be in a position to exercise discriminatory power unless her legislators have a change of heart. Her policy is to open her doors to many who cannot secure recognition in any other state.

Well-educated physicians will always be welcome here. There are more than enough of the indifferent class.

Even those members of the Legislature who naturally would vote for better statutory requirements respecting medical education are pessimistic respecting prospects for endorsement of the recommendations of the Board of Registration in Medicine.

There is no doubt but that the future will see changes for the better but this is not likely until the general public shall have come to realize the great importance of a body of practitioners comparatively well equipped to deal with the health of the people.

Our leaders are striving for this awakening but it will be deferred unless the nearly five thousand better equipped doctors unite in an educational campaign.

A GRACIOUS RECOGNITION

BY those who appreciate the fact that health is the most valuable possession of the individual and the nation, the reappointment of Dr. George H. Bigelow as Commissioner of Public Health of Massachusetts will be enthusiastically endorsed. Gratitude to Governor Ely for this sympathetic endorsement of the great service rendered to the State by the Department of Health which reflects the wide vision and dynamic energy of its leader, will be well-nigh universal. The Massachusetts Department of Public Health as a continuing organization of the former State Board of Health has always maintained an enviable position among the official bodies responsible for the well-being of the nation and its influence has been augmented under Dr. Bigelow.

The common spirit of devotion to the highest ideals of public service among the heads of the several subdivisions of the Health Department is a tribute to the wisdom of the Commissioner.

The State has been fortunate in having a Health Commissioner whose sympathetic understanding of the mental reactions of certain elements in the population, born of misunderstanding of that which is for their best interests, has enabled him to rise above intemperate opposition and maintain poise and will to carry forward so far as possible measures designed to promote and maintain important policies. The State can confidently look forward to steady and well-designed progress in Public Health under this Department.

Congratulations to the Governor, the State and Dr. Bigelow are extended by the *Journal*.

THIS WEEK'S ISSUE

CONTAINS articles by the following named authors:

ROOT, HOWARD F. A.B., M.D. Harvard University Medical School 1919. F.A.C.P. Physician, New England Deaconess Hospital. His subject is "New Cases of Combined Pernicious Anemia and Diabetes." Page 819. Address: 81 Bay State Road, Boston.

OVERHOLT, RICHARD H. A.B., M.D. University of Nebraska 1926. Formerly Resident, University of Pennsylvania Hospital, Philadelphia. Fellow in Surgery, Division B., University of Pennsylvania. Instructor in Surgery, Univer-

sity of Pennsylvania. Now, Surgeon, Lahey Clinic, in charge of Thoracic Surgery. His subject is "Pulmonary Cavitation and the Principles of Surgical Treatment." Page 823. Address: 605 Commonwealth Avenue, Boston.

COTTON, FREDERIC JAY. A.B., A.M., M.D. Harvard University Medical School 1894. F.A.C.S. Consulting Surgeon, Boston City Hospital, Faulkner Hospital and Beth Israel Hospital. His subject is "Traumatic Arthritis." Page 829. Address: 520 Commonwealth Avenue, Boston.

WALLACE, RICHARD H. A.B., M.D. Harvard University Medical School 1927. Assistant in Surgery, Massachusetts General Hospital and Harvard Medical School. Address: 264 Beacon Street, Boston. Associated with him is

MILLER, RICHARD H. A.B., M.D. Harvard University Medical School 1910. F.A.C.S. Assistant Professor of Surgery, Harvard Medical School. Associate Surgeon, Massachusetts General Hospital. Address: 264 Beacon Street, Boston. Their subject is "Primary Omental Torsion." Page 831.

COUES, WILLIAM PEARCE. M.D. Harvard University Medical School 1894. F.A.C.S. His subject is "Balzac's Account of Ambroise Paré and the Last Illness of Francis the Second." Page 834. Address: 12 Monmouth Court, Brookline, Massachusetts.

NELSON, SOPHIE C. R.N. President, National Organization for Public Health Nursing. Director, Visiting Nurse Service, John Hancock Mutual Life Insurance Company. Her subject is "Commencement Address." Page 838. Address: 197 Clarendon Street, Boston.

HALL, CARRIE M. R.N. Graduate Nurse, Massachusetts General Hospital Training School for Nurses, 1904. Certificate in Administration and Teaching, Teachers College, Columbia University, 1912. President, Massachusetts State Nurses' Association, 1921-1925. Principal, School of Nursing of Peter Bent Brigham Hospital since 1912. Her subject is "Report of the School of Nursing of the Peter Bent Brigham Hospital." Page 841. Address: Peter Bent Brigham Hospital, Boston.

MORSE, JOHN LOVETT. A.M., M.D. Harvard University Medical School 1891. F.A.A.P. Professor of Pediatrics Emeritus, Harvard Medical School. Consulting Physician at Children's Hospital, Infants' Hospital and Beth Israel Hospital. Member, New England Pediatric Society, American Pediatric Society, Association of American Physicians and Boston Obstetrical Society. His subject is "Progress in Pediatrics." Page 843. Address: 319 Longwood Avenue, Boston.

MASSACHUSETTS LEGISLATIVE NOTES

The following bills have been given leave to withdraw:

S. 162—petition of George H. Bigelow for legislation to require the vaccination of children attending private schools.

S. 212—petition of Citizens' Committee Opposing Compulsory Vaccination, by John S. Codman, chairman, and another that the vaccination or inoculation of persons be made voluntary.

H. 783—petition of the Citizens' Committee Opposing Compulsory Vaccination that the public be protected from impure vaccine and for a civil remedy for abuse thereof.

H. 298—petition of Thomas E. Barry and others that the Department of Public Health be authorized to establish a laboratory and experimental hospital and regional hospitals in the several counties.

H. 446—petition of Annie Dixon Brown that the conduct of physicians and surgeons be regulated further.

H. 660—petition of Lewis R. Sullivan, Jr., and Daniel W. O'Connor that the Department of Public Health be authorized to distribute insulin for treatment of diabetes and other diseases.

H. 782—petition of Henry C. Kennington and others for legislation to establish the status as physicians of persons engaged in the practice of osteopathy prior to January 1, 1909.

H. 1039—petition of Joseph A. Logan that physicians and others make reports to boards of health, and the Department of Public Health to the Registrar of Motor Vehicles of all cases of epilepsy.

H. 343—petition (from files of 1932) of Henry A. Estabrook for establishment in the Department of Education of a board of supervisors of educational degrees.

H. 311—petition of Thomas E. Barry and others that a division of therapeutics be established within the Department of Public Health.

H. 728—petition of the State Committee of the Socialist Party that there be established under state control an educational institution to be called the University of the Commonwealth of Massachusetts.

H. 755—petition of Thomas J. Lane relative to appointment and fees of physicians making examinations under the laws relating to compensation of employees injured in industrial plants.

The following bills have been referred to the next annual session:

S. 161—petition of Charles G. Miles for legislation relative to the composition of local boards of health and to the powers and duties of chairmen and health officers of said boards.

S. 113—petition of Wegea H. H. Tracy, clerk, New England Anti-Vivisection Society, and Frank Hurley that certain experiments and operations on live dogs be penalized.

H. 209—petition of Frank L. Whipple that the

University of Massachusetts, Inc., be authorized to grant the usual university and college degrees.

H. 544—petition of Courtenay Crocker and others that hospital medical officers be authorized to practice outside the institutions designated on their certificates under suitable restrictions and regulations. In House, April 5; ord. 3d, April 6.

"No Legislation necessary" has been reported on the following bills:

H. 123 — Bill (accompanying 117, recommendations of the Commissioner of Public Health) relative to the divulging of hospital, dispensary, laboratory or morbidity reports and records pertaining to gonorrhea or syphilis.

H. 151—Bill (accompanying 148, recommendations of the Commissioners on Uniform State Laws) defining and relating to narcotic drugs, and to make uniform the law relating thereto.

The following bill was enacted and signed by the Governor on March 13:

H. 1114—petition of Francis D. Donoghue relative to charges of certain hospitals for treating employees injured in industrial accidents.

MISCELLANY

A RADIO MESSAGE PREPARED AND SPONSORED BY THE COMMITTEE ON PUBLIC EDUCATION OF THE MASSACHUSETTS MEDICAL SOCIETY FOR THE DEPARTMENT OF PUBLIC HEALTH

THE USE AND ABUSE OF SERUMS AND VACCINES*

BY JOHN F. ENDERS, PH.D.

I am going to tell you briefly about the use and abuse of serums and vaccines, but in order to make clear what I have to say, it will first be necessary to get some idea of what the bacteriologist or physician means when he talks about a vaccine or serum.

The word "vaccine" was first used to describe the material employed in vaccinating against smallpox. But with the advance of knowledge it was found that it was possible to protect against many diseases in a more or less similar manner. "Vaccine" now means any material which contains a virus or germ or its poison so altered that when it is injected into a man or an animal it cannot cause the disease but nevertheless is still able so to change the condition of the body that the fully virulent virus, the virus with a "bite," when it comes along is unable to produce its usual fatal or exceedingly unpleasant effects.

Various are the ways in which this alteration of virulence—this pulling the germ's teeth, can be done. But whatever method may be adopted, vaccines fall into two classes. In one the virus or bacteria which compose the vaccine are still alive, but have been made incapable of causing active or bacteria or the poisons produced by them have disease. In the second class of vaccines the virus been killed or rendered no longer poisonous, and it is only their dead bodies or the non-poisonous substances which are injected. The vaccine used against smallpox belongs to the class in which the virus is still alive but made completely harmless. That used to prevent typhoid fever is made up of killed typhoid germs.

When you speak of a person as being vaccinated, you should mean that he has been injected with one or the other of these types of vaccine with the purpose of preventing him from contracting the disease or, in rare cases, to help cure him of a disease from which he is suffering.

A "serum," or—better—an "antiserum" is usually prepared by injecting into a horse one of the classes of vaccines which I have just mentioned. In time substances develop in the blood serum of the horse which help destroy the virulent germ or act as an antidote to the poison produced by it. If we take the blood serum of this horse and inject it into a person who is already sick with the disease caused by the germ or poison which we gave the horse in its modified form of a vaccine, we may pass on to the sick person the power of overcoming the germ or its poison which the horse gained as a result of his treatment with the vaccine.

If someone has been recently exposed to a disease and we wish to prevent him from developing it, we give him a serum, since if he were vaccinated a rather long time would have to pass before protective substances were formed in his own blood serum.

In general, vaccines are used to prevent you from getting a disease; serums are mainly employed in treating you after you become ill.

I will now take up in order the various diseases in which serums and vaccines have proved of value and point out some of the abuses of these materials.

First of all comes smallpox. We have information regarding the effect of vaccination on the prevalence of smallpox which now covers a period of nearly 140 years. In spite of the opposition to this practice which even today is occasionally apparent, there can be no doubt that it has saved unnumbered thousands from death or disfigurement during this long period of time. Lord Macaulay has written in rather high-flown but nevertheless vivid language a description of what smallpox did in prevaccination days:

"That disease over which science has since achieved a succession of glorious and beneficent victories was then the most terrible of all the ministers of death—smallpox was always present, filling the churchyard with corpses, tormenting with constant fear all whom it had not yet stricken, leaving on those lives it had spared the hideous traces of its power, turning the babe into a changeling at which a mother shuddered, and making the eyes and cheeks of the betrothed maiden objects of horror to the lover."

Diphtheria comes next on the list. Vaccination

*Station WBZ, March 14, 1933, 4:30 P.M.

against this disease is a simple and harmless way to protect children and susceptible adults. More people should avail themselves of this opportunity to guard their children from a malady which often proves fatal.

Scarlet fever is a third disease against which it is possible to vaccinate. Recently a method of protection has been worked out which as far as it is possible to tell from the experimental results and the available statistics offers an efficient means of safeguarding the individual and stopping an epidemic.

Typhoid fever and its close relations, the paratyphoids, one time slew each year their thousands. In the richer and more intelligent regions of the world they have been largely eliminated by the watchfulness of Public Health officials over supplies of food and water. Nevertheless, in areas where such guardianship of food and water is lacking, as it is in some of our southern states, typhoid fever still flourishes. In such communities, it is well to be vaccinated. Recent experiments on improving typhoid vaccine promise to make it an even more valuable weapon in fighting this disease.

Vaccination against rabies or hydrophobia is only done in cases where people have been bitten by a mad dog, but under these circumstances, if a person does not have himself vaccinated, he is acting as madly as the animal that bit him. Those who have dogs and wish to protect themselves and their pets should have their dogs vaccinated, since even in a place like Massachusetts frequent outbreaks of rabies occur and your dog may one day be one of the victims.

We are still without complete information about protective vaccines against measles and whooping cough and the much-feared infantile paralysis. In the case of whooping cough, which by the way may be a more serious disease in very young children than many people know, we have the germ that causes it, and at the moment bacteriologists are working with encouraging progress to find a safe and effective means of vaccinating against it.

The cause of "flu" is still unknown and it is very probable that until its nature is revealed there will be no reliable vaccine. So-called influenza vaccines have been tried with contradictory results. Their administration, unless with the open admission that it is entirely experimental, should be at the moment classed as a frank abuse of vaccine.

Practically everybody would throw their hats in the air and cheer if they were told that at last a real prevention for the common cold had been found. Unfortunately, there is no such medicine or vaccine or serum. It is true that what are called "cold vaccines" are being widely used, but they consist of a lot of killed bacteria which have nothing to do with the virus that really is the cause of our discomfort. There is no basis in scientific fact for their use. Theoretically they may possibly aid in making the attack somewhat milder by preventing some of the ordinary germs which we all have in our throats from becoming active. The use of cold vaccines should be regarded with scepticism.

There is one disease—tuberculosis—in which vaccination is being extensively used in France. The vaccine is composed of the living germs of tuberculosis which have been made incapable of causing tuberculosis. As yet, its employment in this country is not widespread, since certain bacteriologists wish to have more evidence of its harmless nature before advising its use.

Now let us see what the doctor has in his bag in the way of useful serums.

Diphtheria antiserum or, as it is usually called, "antitoxin" has saved the lives of vast numbers of children and is the first thing the doctor reaches for when he has made his diagnosis.

Certain kinds of pneumonias are greatly aided by antiserum treatment. Its success depends mainly on receiving the serum early in the course of the sickness.

There is probably room for improvement in the serum employed in meningitis, but even that which we now have saves each year to my knowledge a score or two of children's lives at the Children's Hospital in Boston.

Within the last eight years a serum has been developed which is of aid in the treatment of scarlet fever.

A serum which combats the powerful poison produced by the bacteria which cause lockjaw is not only given in the treatment of this disease where its effect is limited, but is universally used as a preventive in cases of dirty, torn wounds in which the lockjaw bacteria are liable to develop.

In diseases such as infantile paralysis, and parrot fever which has lately received its share of publicity in the newspapers, convalescent serums are used. Such serums are simply the blood serum of people who have recovered from these infections. Their curative action depends upon the same substances which combat and destroy the bacteria in the antiserums we get from horses.

So far as I know there is at the moment no notorious abuse of antiserum, but if anyone suggests to you that he is going to cure your cancer, your rheumatism or your tuberculosis by means of a serum, seek help from somebody else.

In closing I want to leave with you the knowledge that you can by vaccination safely guard yourselves from smallpox, diphtheria, and typhoid fever; if you fall a victim to spinal meningitis, certain types of pneumonia, diphtheria and scarlet fever there are serums which may save your life if you receive them early in the disease; and, finally, if you are bitten by a mad dog or drive a nail covered with soil and manure into your foot, you may protect yourself from rabies or lockjaw by immediately receiving the proper vaccine or serum.

CORRESPONDENCE

OBSERVATIONS ON MEDICAL EDUCATION IN EUROPE

Carnegie Institution of Washington
Nutrition Laboratory
29 Vila Street, Boston, Massachusetts

April 6, 1933.

Managing Editor,

The *New England Journal of Medicine,*

I have been extremely interested in reading the editorial in the March 30 number of The *New England Journal of Medicine*, on "Foreign Dumping on Massachusetts."

Having just spent six months in Europe, lecturing in practically all of the large European universities, I had occasion to see a great many American students. The situation is in many ways extraordinary. The countries where most American students have gathered have been Germany and to a certain extent Austria. I was told that one of the large transportation companies had made a campaign and had succeeded in bringing over I think about fifteen hundred American students. German professors reported that almost invariably they were of a quality below what they had been accustomed to see in American medical students. They told me also that many of these men were men who had failed to secure admission to the regular American schools. It was not made clear whether they had failed to pass the admission examinations and hence were not intellectually prepared for this work or whether they had not been able to be in the selected group that had been chosen for admission to any of our schools. Unfortunately they reported to me that they were on the whole not a particularly satisfactory group.

I tried to see as many as I could of them, and very many of them attended my lectures and I was able to speak to a good many afterwards. In some cases the professor asked me to address the American students in my audience in English before giving my lecture in either German or French. The general tenor of my remarks was to the effect that I was very much distressed to hear that the men had not, for the most part, come up to what had been expected of American students; that just at that time there was a controversy going on in New York with regard to the admission to practice of graduates of foreign universities, and I emphasized to these students that they must so comport themselves, both in the clinics and out, as to show what serious American students could be, and secondly, when they came back to America they must return so well trained that there could be no discussion as to the qualifications of graduates of certain European schools for practicing in America. My personal contacts with them were most pleasant; in fact, the groups that I met rather belied the impression that they were below par. I frankly discussed this with them and not a few admitted that they were over there purely as a matter of expediency.

There is one phase of your editorial that I think is perhaps misleading, that is, the economic side of it. As a matter of fact, each American student in a German university costs the Government close on to 800 marks per semester over and above what the student pays, which I believe is only about 200 marks. A number of professors bemoaned the fact that they had no means of disposing of these men until they had been at the university for nearly a year and a half, when their first examination took place. Only when they failed in that examination could they be sent out from the university. The result is that the situation is extremely complex and economically not to the advantage of German universities.

In striking contrast to the German situation is the American group at present studying in the Swiss universities. There they have made a very fine impression and are, I believe, very welcome.

In France the situation is much the same as in Germany, only the influx of students is not so much from America as from the eastern states, particularly Yugoslavia, Czechoslovakia, and Poland, but the French professors, while they all recognize that these students are a heavy drain financially upon the French Government, yet feel their definite obligation to medical education in making it possible for these men to partake of the advantages in the French schools.

With best regards, I am

Very truly yours,

FRANCIS G. BENEDICT, *Director.*

P. S.: You might possibly be interested in the type of work I was doing in Europe and the series of lectures I gave, and I am enclosing the printed outline of the three lectures.

EDITORIAL NOTE: The work referred to by our esteemed correspondent is under the general title of "The Physiology of the Great Tortoises and Snakes and Its Relation to Human Physiology." His subheads indicate a broad conception of the problems involved.

PROGRESS IN CONTROL OF PREVENTABLE DISEASE

A LETTER TO PHYSICIANS

To the Members of the Medical Profession:

If we are to make the necessary progress in the further control of preventable disease and in the maintenance of higher standards of health, it is important to enlist the active participation of the rank and file of the medical profession. We can lessen the number of cases of diphtheria, tuberculosis, smallpox and other communicable diseases in our midst if we can secure the coöperation of the doctors of our community in the practice of preventive medicine.

In order to develop an increasing interest in this

most important aspect of medical practice, the following Public Health Institute has been arranged to which you are cordially invited. We trust that you will avail yourselves of the opportunity to attend and that you will mark these dates on your calendar.

Very truly yours,

FRANCIS X. MAHONEY, M.D.,
Commissioner of Health.

CHARLES F. WILINSKY, M.D.,
Deputy Health Commissioner in Charge of Child Hygiene and Health Units.

PUBLIC HEALTH INSTITUTE

Whittier Street Health Unit
20 Whittier Street
Roxbury, Massachusetts

(This course of lectures is being presented under the auspices of the Department of Health and has been endorsed by the Harvard School of Public Health and the Department of Biology and Public Health of the Massachusetts Institute of Technology.)

PROGRAM

April 24, 26, 28—May 1, 3, 5—At 3:30 P.M.

April 24, 3:30 P.M.

The Physician and Public Health—Dr. Wilson G. Smillie.

Obstetrics: Prenatal Care—Dr. Thomas Goethals.

Delivery and Postpartum Care—Dr. A. K. Paine.

April 26 and April 28, 3:30 P.M.

The Infant and Child: Normal Development, Health Supervision, Prevention of Disease—Dr. Richard M. Smith, Dr. Harold C. Stuart.

May 1, 3:30 P.M.

Methods for the Control of Specific Diseases: Diphtheria, Smallpox, Scarlet Fever, Typhoid Fever, etc.—Dr. Edwin H. Place.

The Prevention and Control of Tuberculosis—Dr. Cleaveland Floyd.

May 3, 3:30 P.M.

Extension of Preventive Measures in Adult Life—Dr. William H. Robey.

May 5, 3:30 P.M.

Health Education—Professor Claire E. Turner.

Relationships between Health Departments and the Medical Profession—Dr. Charles F. Wilinsky.

RECENT DEATHS

BAKER—DAVID ERASTUS BAKER, M.D., of Newtonville, Massachusetts, died April 9, 1933. He had practiced in Newtonville for nearly fifty years after graduating from the Harvard University Medical School in 1883. He was born in Franklin in 1857, a descendant of a family which settled in Dorchester in 1630. Before studying medicine he was graduated from the Massachusetts Agricultural College. He joined the Massachusetts Medical Society in 1883 and became prominent in its affairs having been President of his District Medical Society. He retired in 1929. He is survived by his widow, two daughters, a brother and a sister.

DOGGETT — FREDERIC FOBES DOGGETT, M.D., who practiced in South Boston from 1882 to 1920, died April 13, 1933, at his home. He was born in 1855 and graduated in medicine from the Medical School of Harvard University in 1880. He joined the Massachusetts Medical Society in 1882 and retired in 1919.

Dr. Doggett is survived by two sons, Arthur L. Doggett, an attorney of Boston, and Professor Leonard A. Doggett of Penn. State College, and one daughter, Miss Elizabeth D. Doggett.

OBITUARIES

IN MEMORIAM

GEORGE HAMLIN WASHBURN

Tufts College Medical School mourns the loss of George H. Washburn, Professor Emeritus of Obstetrics.

George Hamlin Washburn was born in Constantinople, Turkey, in 1860, the son of Dr. and Mrs. George Washburn. He received his preliminary education at Robert College and his classical studies were pursued at Amherst College, from which institution he graduated in 1882. He then entered the Harvard Medical School and received his M.D. with the class of 1886. He served as House Officer at the Boston City Hospital and at one time was on the Staff of St. Elizabeth's Hospital and on the Consulting Staff of the Free Hospital for Women. He was elected Professor of Obstetrics at Tufts College Medical School in 1896 and served in this capacity until the end of the session 1911-1912, when he was made Professor Emeritus. He had always maintained an interest in the affairs of the Medical School and was frequently seen at class and alumni reunions. His students respected him greatly and many of them became his close friends. He leaves an impression on Boston Obstetrics and on hundreds of young men who have felt the influence of his personality and character as a teacher and as a man.

He was a member of the American Medical Association, the Massachusetts Medical Society, which he joined in 1886, the New England Obstetrical and Gynecological Society and the Obstetrical Society of Boston, being a former president of the latter. He was a trustee of Robert College of Constantinople, which was founded by his grandfather, and a member of the Delta Kappa Epsilon Fraternity, the Harvard Club of Boston and the University Club.

In 1918 he served as director of one of the medi-

cal units sent by the Near East Relief to Turkey and established fifteen hospitals in Asia Minor.

He married Anna M. Hoyt of Auburn, New York, in 1887, who died in 1918.

Preëminently a specialist Dr. Washburn gave to his work something far above the technical proficiency of the specialist. He had in a large measure that idealized attribute usually associated with the general practitioner which makes him minister not only to physical ills, but also makes him a guide, counsellor, confidant, — a friend, in the highest sense of the word. Those who were fortunate in having Dr. Washburn for a physician were very conscious of his friendship, of his hearty, virile personality, of his never-failing cheerfulness and his enduring sense of humor. His intimates, and those closely associated with him professionally, were also very conscious of and happy in his friendship, in his enthusiasms, in his knowledge of and interest in many people and in many things. His companionship will be widely and sorely missed.

Signed
LOUIS E. PHANEUF, M.D.,
ALONZO K. PAINE, M.D.

WILLIAM PHILLIPS GRAVES, B.A., M.A., M.D., F.A.C.S., F.B.C.O.G. (HON.), D.Sc. (HON.)

JANUARY 29, 1870-JANUARY 25, 1933

By the death of William Phillips Graves the Boston Surgical Society has lost one of its most distinguished members. Strength, courage and ability were his endowments; industriousness, concentration and force were his characteristics; knowledge, skill and accomplishment were his acquirements.

He was the son of William Blair and Lurana (Copeland) Graves, whose lines run back through New Hampshire Colonial ancestry to Scotch and English progenitors. His father occupied professorial chairs in Physics and Chemistry in Marietta College, Ohio, and at the Massachusetts Agricultural College. Eventually he became the head of the Scientific Department of Phillips Academy at Andover, Massachusetts. It was from this famous preparatory school that William Phillips Graves received his middle name and his early academic training, winning prizes in both Latin and Greek and excelling in nearly all indoor and outdoor sports. He entered Yale in 1887, making the Varsity football team and *The Yale Record* in his Freshman year, graduating in 1891 with an unusual record for both scholarship and athletic prowess, editor-in-chief of the *Record* and member of Skull and Bones Senior Society. From 1891 to 1893, he was on the faculty of the Hill School at Pottstown, Pennsylvania, teaching Latin, penmanship, drawing, English composition and American history, besides serving as general director of the school's athletics.

From 1893-1894, he pursued postgraduate studies at Harvard in Art, European history, French and Italian, going back to the Hill School in 1894 and 1895 for more teaching, because the school wanted him and his purse was slender. His decision was finally made to study medicine and to become a surgeon. During his four years at the Harvard Medical School, he supported himself by tutoring and was graduated at the head of the class of 1899 with a "summa cum laude".

After a surgical house officership at the Massachusetts General Hospital, he was married to Alice Myrick Chase and spent a year of study abroad, majoring in pathology under Storck at Vienna. On his return to America, he continued these studies under Cullen, Sampson and Kelley at Johns Hopkins. In May, 1902, he became associated with the Free Hospital for Women in Brookline and established its pathological laboratory.

The members of the Boston Surgical Society are conversant with his brilliant medical career. In 1905, he was made assistant in gynecology at Harvard and in 1908, only eight years after he had received his medical diploma, had risen to the post of surgeon-in-chief of the Free Hospital. Three years later he was made Full Professor of Gynecology at the Harvard Medical School.

His contributions to medical literature were many, original and important. They covered nearly every phase of his specialty. In 1916 was published Graves' Textbook of Gynecology which has run through four editions and is still accepted as the standard English volume on the subject. Another magnum opus, "Female Sex Hormonology," was published in 1931.

Recognition of his ability, industry and knowledge was general. The British Congress of Obstetricians and Gynecologists made him their guest of honor in 1927, and the British College of Obstetrics and Gynecology conferred honorary Fellowship upon him in 1932. Boston University gave him a D.Sc. last June and he was made a graduate member of the scholarship societies of Alpha Omega Alpha and Sigma Xi. He was President of the American Gynecology Society in 1931, a Fellow of the American College of Surgeons, and held membership in all the important gynecological, national, sectional, state and local societies. He belonged to the Somerset, Tennis and Racquet, Brookline Country and New Riding Clubs.

This long list of his medical and civic attainments is no measure of the respect and warm affection in which the members of the Boston Surgical Society held him. We knew that by indefatigable devotion he had built the Free Hospital for Women into a great clinical and teaching institution. We knew that students recognized his knowledge and profited by his instruction. We knew that his private practice was large and that he was accepted by his patients as the last authority. His repute was international. Some of us were made aware also of his good companionship, of his high standards of sportsmanship, of his fine

artistic feeling and execution, and of his broad learning. He seemed to be equally at home with old Greek philosophers, with new advanced psychiatrists and with ardent championship golfers. He was devoted to his wife and to his three children. He played with them and taught them. He planned for his own and his family's future happiness by acquiring the old Prescott estate at Pepperell, looking forward to the time when he could lay down his compelling duties and drink deeply of the health of the good earth.

The one lesson he never learned was the conservation of his own great energy. A few days before he died, aware of a serious cardiac involvement and warned by previous symptoms, he insisted upon performing several taxing hospital operations which he had promised to carry through. Unwise, perhaps even reckless, yet a surge of admiration stirs us when we realize the sense of duty and the personal courage which the act connotes. A courage that in the words of John Galsworthy, when death called across his shadowy fields, dying, answered, "Here! *I* am not dead!"

Resolved, that this article be spread upon the records of the Boston Surgical Society and that a copy be sent to Mrs. William Phillips Graves.

FRANK D. PEMBERTON,
DONALD MACOMBER,
ROBERT B. OSGOOD,
Committee of the
Boston Surgical Society.

April 3, 1933.

RESOLUTION ON THE DEATH OF DR. WILLIAM P. GRAVES

Whereas, the death of Dr. William P. Graves has taken from the Obstetrical Society of Boston an eminent member and former President; therefore be it

Resolved, that by his death we have lost a surgeon who had a complete knowledge of his specialty which he was able to impart to others by his teaching and writing; an artist of great ability; a man of culture who thought profoundly and constructively; and a physician who took the most conscientious care of his patients.

M. F. EADES, *Secretary.*

GEORGE HOWARD MONKS, M.D.

Dr. Monks was born in Boston, March 28, 1853, the son of John P. and Delia S. (Hatton) Monks. His premedical education was acquired at the Boston Latin School and Harvard College, and he graduated from the latter institution in 1875. After a short course at the Massachusetts Institute of Technology he turned his attention to medicine and graduated from the Medical School at Harvard University in 1880. He served an internship at the Massachusetts General Hospital and later studied at Vienna, Leipzig, Heidelberg, Dresden and Paris. He secured membership in the Royal College of Surgeons in England. Returning to Boston in 1884 he was appointed to the Visiting Staff of the Boston Dispensary and a little later Visiting Surgeon to Carney Hospital. In 1890 he was appointed to the Surgical Staff of the Boston City Hospital being advanced in 1910 to the position of Surgeon-in-Chief and after his resignation in 1914 was given the distinction of Consulting Surgeon.

He taught surgery in the Harvard Medical School for eleven years and held the position of Professor of Oral Surgery in the Harvard Dental School for a number of years. At various times Dr. Monks devised surgical operations and instruments and made valuable contributions to medical literature. Among the later of his papers are the "Selections from the Medical Writings and Sayings of Dr. Oliver Wendell Holmes" and the "Obituary of Dr. Vincent Yardley Bowditch" both published in the *New England Journal of Medicine*, The offices held by Dr. Monks included President of the Suffolk District Medical Society, President of the Boylston Medical Society, Vice-President of the American Surgical Association, President of the Boston Surgical Society, and President of the Boston Medical Library. He held membership in the American Medical Association, the Massachusetts Medical Society, the Boston Society of Medical Sciences and the Boston Society for Medical Improvement.

He was a prime mover in starting the Boston Surgical Society, one of its early Presidents, and to him very directly is due the establishment of the Foundation of the Bigelow medal, periodically bestowed by the society.

His social clubs were the Tavern, the Somerset, the Harvard, the Country Club, and the Thursday Evening Club.

In 1897 Dr. Monks married Miss Olga Eliza Gardner who survives him as do three children, the Rev. George G. Monks, Dr. John Monks and Miss Olga Monks. A sister, Mrs. Walther Hempel, is living in Dresden, Germany.

Owing to Dr. Monks' years of retirement and partial invalidism, the active generation has been unfortunate in lacking contact with the man who particularly represented the side of our profession so little conspicuous today.

With him there was never a question whether medicine was a profession or a business.

He was an excellent surgeon; how good only those who worked with him will ever know, for he took his satisfaction in doing things, not in reporting them.

For years he busied himself with the working out of surgical investigation—clinical research to which he contributed much—with clever operation, with the heavy routine of the Boston City Hospital where he served so long, with the surgical instruction of the Harvard Dental School, which owes him no little, not only in instruction but in kindly interest and service.

He did much work in surgery, always most in-

telligent—(and one remembers always his logical ingenuity)—always competent, often brilliant.

And as a consultant admirable, not only technically but in that he was human and very understanding.

It is for this that many younger men remember him best,—and very kindly.

He wrote infrequently and is remembered today mainly by his excellent research work on intestinal localization which is a classic.

But it is interesting to note that after all these years our classification even of bursal disorders at the shoulder comes back again to his "periarthritis" at a time forty years ago, when his surgical acumen led to the recognition and treatment of these cases as a class—the Monks' triangle splint devised in this connection still survives.

Always a deft ingenious mechanic he busied himself early with the magnetic localization and removal of foreign bodies.

Always an artist he particularly delighted in plastic surgery and was amazingly successful with it at a time when he was one of very few competent for this work.

It was as the artist and the man of culture we shall always best remember him,—the handsome, debonair Monks, gravely courteous, never ruffled, never hurried.

Of high intelligence, his ideals, high standards, curiously unselfconscious, without trace of timidity, but always modest and self-effacing, he brought a certain fineness of finish to all he did.

His sculptures, whether the admirable portrait busts or the little Aphrodite perched on his desk, had no trace of crudeness, were not only competent but professionally competent as well as lovely in conception.

And when he wrote, as he so often did, on non-technical medical things, his taste and style were not only good but had real artistry of diction and of finish.

What he wrote in later years is familiar to many. The biographies in brochure of Henry J. Bigelow, of the older John Homans, of Bradford, or Morton Prince, of Vincent Bowditch, and not least that of John Collins Warren are familiar to many. More familiar yet are the medical excerpts from Oliver Wendell Holmes. And all these done in his neat characteristic way, and beautifully done.

In personal and social intercourse he was and could not help but be interesting, but beyond that his grave thoughtful courtesy with great kindliness and interest gave him an odd and very personal charm.

A very worthy and admirable gentleman, an artist in work and in life!

FREDERIC J. COTTON,
HORACE BINNEY,
OTTO J. HERMANN,
Committee of the
Boston Surgical Society.

NOTICES

CLINIC IN MEDICINE AT PETER BENT BRIGHAM HOSPITAL

On Thursday, April 27, at 3:30 P.M., Dr. Henry A. Christian, Hersey Professor of the Theory and Practice of Physic, Harvard, and Physician-in-Chief, Peter Bent Brigham Hospital, will give a clinic in the Amphitheatre of the Peter Bent Brigham Hospital which members of the medical profession are cordially invited to attend. This will be the last clinic of the season 1932-1933.

Physicians and medical students are also invited to attend ward rounds of the Medical Staff of the Peter Bent Brigham Hospital held from 10-12 o'clock on Saturdays, as well as a clinical-pathological demonstration immediately following these rounds.

RADIO HEALTH MESSAGES

APRIL-MAY-JUNE, 1933

Sponsored by the Public Education Committee of the Massachusetts Medical Society and the Massachusetts Department of Public Health.

Courtesy WBZ. Tuesdays, 4:30 P.M.

April

25 Eat That You May Have Something to Eat With

May

2 High Blood Pressure
9 Goiter
16 Arteriosclerosis
23 Chronic Bronchitis
30 Neurasthenia

June

6 Safer Maternity
13 The Care of the Skin
20 A Heart to Heart Talk
27 Social Service in Public Health

STATE HOUSE BROADCAST

Sponsored by the Massachusetts Department of Public Health.

Courtesy WEEI. Fridays, 12:45 P.M.

Health Subjects of Public Interest discussed by the Division Directors of the Department.

RADIO HEALTH FORUM

Queries from the public are answered under the sponsorship of the Department of Public Health.

Courtesy WEEI. Fridays, 4:50 P.M.

Questions on Health and Prevention of Disease may be sent to: Radio Health Forum, State Department of Public Health, State House, Boston.

REPORTS AND NOTICES OF MEETINGS

GREATER BOSTON MEDICAL SOCIETY

The Greater Boston Medical Society met in the Amphitheatre of the Beth Israel Hospital on Thursday evening, March 23, for a symposium on the recent report of the Committee on the Costs of Medical Care. Dr. William Dameshek presided.

The first speaker of the evening was Dr. George H. Bigelow, Commissioner of Public Health in Massachusetts, who considered the Majority Report. Dr. Bigelow reviewed briefly the findings of the Committee and stated that the facts uncovered stressed mainly two points, namely, (1) that most of the people in this country are receiving inadequate medical care at too high a cost, and (2) that those giving the care are inadequately rewarded for their services.

In speaking particularly of the recommendations for the strengthening of the Public Health Service, the speaker stated that the practice of these principles would serve to remove in large part the present cause of friction between the practitioners and Departments of Health. The early recognition of tuberculosis and immunization as well as other duties now carried out by the State could thereby be transferred to the physicians engaged in active practice.

Dr. Bigelow stated that although it was unfortunate that the recommendations of the Committee did not receive the support of the American Medical Association, this might well be anticipated, since in the reform of professions and institutions the impetus often must come from without the organization. He cited the example of the British Medical Association refusing to accede to the recommendations offered by David Lloyd George in 1911, and later accepting these views when they saw that the change was inevitable.

Finally the speaker emphasized the difference of the American pattern of hospitals from the European plan. Here we have trustees governing the financial side working hand in hand with the medical advisers, and this system of private hospitals is one that must be preserved if we are to avoid the institution of State Medicine.

Dr. Channing Frothingham discussed the Relation of the Physician to the Report. He emphasized that what we want essentially is the best medical care for everyone, for this will be the cheapest in the long run. In criticizing the present system, the speaker spoke of (1) the large amounts of money expended for medicines not prescribed, (2) the many doctors who are sincere, but poor in medical ability, (3) the inefficiency of the hospital service from the standpoint of economy to the patient.

In his statements regarding the best medical service for all concerned, Dr. Frothingham stressed the need of a medical adviser for the people seeking medical attention. Such a person would not be a general practitioner in the sense that he carried out all procedures for diagnosis and treatment, but rather one acquainted with the environment of the patient and the complex structure of the medical profession, and because of this twofold knowledge would be able to guide and advise the patient most appropriately. Some of the qualifications of such an adviser are that he be well trained and able to keep in touch with the new advances in medicine.

Dr. Frothingham considers it advisable to carry this plan into the out-patient department and admission offices of the hospitals as well. Rather than have a patient go to the surgical or medical department, he should first consult a medical adviser who will learn and evaluate all of his medical problems. The special hospital for obstetrics, psychiatry and other particular conditions falls under the same criticism, with a centering of attention on one phase of the patient without attention to the entire picture.

Mr. Richards Bradley discussed the Report from the Standpoint of the Layman. Mr. Bradley has been interested in an experiment being conducted in Brattleboro, Vermont, where he has been in charge of a fund to provide medical care for the citizens of that town. He stated that the layman should be interested in getting the equipment necessary for medical function, but that he should leave the function to the physician. In the experiment in Brattleboro it was found that one person in 33 had a large medical expense annually. The ideal for which the new plan strives is to have this expense divided equally among the 33 and yet preserve the privilege of the patient choosing his own physician and hospital.

Dr. Charles F. Wilinsky, Director of the Beth Israel Hospital, closed the regular program with a discussion of the Report in Relation to the Hospital. He spoke of the necessity of preserving the private hospital in the new plan. A group of hospitals in a community such as Boston might well bring about a great saving in the costs of medical care by some united plan of action. Such a plan, however, should be so devised that the patient may be treated by a physician of his own choosing wherever he is confined with his illness. The speaker closed with the statement that in the evolution of a plan for group payment, the first step may be the group payment for the upkeep of hospitals followed by group payment for the fees of physicians.

Dr. Harry Linenthal discussed the papers of the evening and spoke particularly of the necessity for medical advisers in guiding the patients to the proper medical treatment.

ALPHA OMEGA ALPHA LECTURE

Dr. Evarts Graham, Bixby Professor of Surgery at Washington University, St. Louis, delivered a public lecture under the auspices of the Alpha Omega Alpha Society at the Harvard Medical

School on March 23, 1933. The speaker's topic was "The Application of Surgery to the Hypoglycemic State Due to Islet Tumors of the Pancreas, and to Other Conditions."

Dr. Graham first reviewed the historical development of the concept of the regulation of the blood sugar level. In maintaining the normal level the pancreas, adrenal medulla, anterior pituitary gland, and thyroid gland are involved. The so-called "hypoglycemic syndrome" would not have been known had it not been for the occurrence of hyperinsulinism following the use of insulin in the treatment of diabetes after 1923. With the establishment of the definite syndrome in diabetic patients after too much insulin, investigators began to see parallel conditions in others, which seemed to indicate overproduction of the substance by some supposedly normal pancreases.

The signs and symptoms of hypoglycemia, any or all of which may be present, are malaise, lassitude, trembling, sweating, fall in temperature, flushing or paleness, hunger, mental confusion, rapid pulse, epileptiform crisis followed by coma, and amnesia. There is no definite blood sugar level at which the hypoglycemic state is present, but with the blood sugar value around 50 milligrams per cent, severe effects are usually produced. From 1924 to the present date various workers have reported on dysinsulinism and hyperinsulinism. In some of these patients carcinomata or adenomata of the islet tissue of the pancreas were demonstrated.

Dr. Graham briefly recounted the stories of three patients operated on at the Barnes Hospital in St. Louis for hypoglycemia. The first patient was a 19 year old boy found in a daze after smashing up his automobile and being removed to a local jail for alleged intoxication. He gave a history of similar attacks of mental confusion in the past. A sample of blood taken during a typical attack showed the sugar to be 40 milligrams per cent. Operation was performed and a tumor two cm. in diameter was removed from the pancreas. The blood sugar is now normal and the patient symptom-free, two and a half years after operation.

The second patient was a 44 year old man who had frequent attacks of weakness, and sometimes unconsciousness, the former being relieved, he found, by candy. A blood sugar determination on a sample taken during an attack showed the level to be 45 milligrams per cent. A tumor one cm. in diameter was removed from the pancreas and immediate cure followed.

The third patient had been treated for "epilepsy" for some time. He was followed for a number of years, with no blood sugar determinations done, unfortunately. It was noticed, however, that whereas there were twitchings often before a meal, such twitchings were relieved by food. Finally, about a year ago, the attacks having increased in frequency and severity, and in the meantime his intelligence quotient having dropped to 60, a blood sugar determination during an attack showed a value of 25 mg. per cent. A small, hard tumor was removed from the anterior portion of the pancreas 10 days later. Following operation there was immediate improvement and the blood sugar rose to normal and above. One week postoperatively, however, the patient had slipped back and his blood sugar was found to be only 40. The question of a second tumor arose, and after due deliberation another laparotomy was performed and a tumor two cm. in diameter removed from the tail of the pancreas posteriorly. Convalescence was uneventful, the young man improved, his blood sugar remained at normal, and his intelligence quotient has risen to 95. This makes a total of seven patients treated by the removal of such tumors, three at the Barnes Hospital.

The differential diagnosis of islet tumor of the pancreas is difficult to make. Simple hypertrophy of the islands, diseases of the adrenals (Addison's disease), chromophobe tumor of the anterior pituitary, liver disease, scleroderma, and instances of so-called spontaneous, periodic hypoglycemia (in children only) must be considered. Also, adenomas, even though present, may of course be inactive. Removal of a part of the pancreas for hypoglycemia, when no tumor is present, has not been attended with good results.

Dr. Graham added in conclusion that here is another example of the effects sometimes produced by a small tumor of a ductless gland (the anterior pituitary, thyroid, and parathyroid glands are other examples). Finally photomicrographs of the tumors removed by Dr. Graham were shown on the screen.

THE CUTTER LECTURE ON PREVENTIVE MEDICINE

The Cutter Lecture on Preventive Medicine was delivered by Louis I. Dublin, Third Vice-President and Statistician, Metropolitan Life Insurance Company, at the Harvard University Medical School on March 17 and March 20, 1933. The subject of this year's lecture was "Trends in Longevity, Past, Present and Future."

The speaker set forth in substance that the approach to the subject of longevity is from two points of view, that of the individual, and that of the group. The so-called "life span" of the individual has not changed in the historical period. The maximum is still around a hundred years. The group, however, is different, its length of life being fixed by the environment and the character of the times. In dealing with the group we speak of "life expectancy". A determination of what this is presupposes that we can follow many individuals until the entire group is accounted for by death. The total years lived by a group of 100,000 individuals divided by 100,000 gives the expectation of life of a given person at birth. By this same method, the life expectancy may be calculated at any point in the scale.

"Life tables" are computed, and we find in them a quick drop-out at the beginning, then a slower fall, and finally a faster rate again. While theoretically good, this scheme has its limitations by the very nature of the inaccuracy and incompleteness of records and reports. Nevertheless we can deduce many interesting figures.

It is probable that in past history the expectation of life at birth was about 25 years. The earliest actual statistics available also indicate a similar figure. In colonial Philadelphia, and in Salem, Massachusetts, such a figure has been shown to hold. At the end of the eighteenth century the figure was about 30 years for the whole United States. The annual death rate was about 33. This figure is the reciprocal of the average length of life.

In 1850 the life expectancy at birth for females was 40.5 years, for males 38.3 years; in 1890, it had risen to 46.6 and 44 years, respectively; in 1930 it was 62.7 years for females and 59.5 years for males, truly a remarkable advance and tribute to medical science and skill. It is seen in all these figures that the expectancy for females is approximately two years more than for males. The gains in expectation made in the last forty years have been greatest in the earlier age groups, with a decline in gains as age progresses. At advanced ages, it is demonstrable, even, that there have been declines in life expectation; but at all ages under 50, there has been an improvement in every age group.

The speaker next presented a table showing the average annual deathrates per 100,000 for leading causes of death, for the periods 1900-1904 and 1925-1929. Tuberculosis, formerly first, with a figure of 184.7, is now sixth, with a figure of 77.2. Cancer, formerly seventh with a rate of 67.5, has come up to second with a rate of 114.3, and is truly increasing at ages of 45 and over, the aging of the population not being the entire factor in its increase. Heart disease has moved from third, with a rate of 127.7, to first, with a rate of 219.7. Typhoid fever, fourteenth 30 years ago, has dropped almost entirely out of the picture; a tribute to modern sanitary science. Practically all the advances have been in the younger age groups, and the problem of the future is in middle life and early old age groups.

The life expectancy at birth in the United States is slightly higher than in Germany, England, and other foreign countries. As age advances the relative values come together and then the expectancy becomes greater in the foreign countries. The advantage in the United States is thus concentrated in the first year of life, our country, for instance, having an infant mortality of about half of Germany's. At age 40, on the other hand, Germany's mortality rate is much lower than ours. New Zealand is striking in that it has the highest life expectancy of any place on the globe—62.7 for males and 65 for females.

A table showing the years of life lost from specific causes was next shown. In other words, the lecturer showed what could be added onto our life expectancy if we entirely eliminated certain diseases. In 1930 the figures were 2.3 years for heart disease, 1.09 years for cancer, 1.10 years for tuberculosis (high because the disease is one of young people), 0.96 years for chronic nephritis, 0.83 years for cerebral hemorrhage, 0.20 years for diabetes mellitus, and 0.26 years for angina pectoris. This shows us the problems to be attacked.

The chances of dying from tuberculosis and cancer were next given. Most interesting of these figures are the following: For males, the chances at birth of dying of tuberculosis later in life are about 4.5%; at 50 the chance of dying of cancer is 11% and from tuberculosis 2.5%; at 50, for females, there is a 13.5% chance of dying of cancer, and a 2.0% chance of succumbing to tuberculosis.

The possibilities of life-saving in the future that can readily be foreseen now in the light of our present-day medical knowledge alone, and not taking into account future discoveries, are several. It is probable that the 1.1 years lost by tuberculosis will decrease considerably. The deathrate continues to go down, even in times of economic distress. Furthermore it is likely that our infant mortality rate will go down from the present 50-60, to 30, or even 25. If this is accomplished the life expectation at birth will rise to 69.6, a gain of about ten years. The great gains in the mortality rates of the future, aside from those in infancy, will be in the years after 50. Whereas, in 1930 one-fourth of the population lived to be 50, and one-half to 60, in the next generation it is likely that one-fourth will live to 64, and one-half to 75. The economic and social implications of such facts are obviously of utmost importance, Dr. Dublin added in conclusion.

THE GREATER BOSTON BICKUR CHOLIM HOSPITAL

Greater Boston Bickur Cholim Hospital staff held its regular monthly meeting Wednesday, March 29, 1933, at the Nurses' Home.

Dr. M. Gerstein, staff chairman, introduced Dr. L. M. Spear of the Robert B. Brigham Hospital as speaker of the evening, whose subject was "Arthritis."

He said in substance that there are three varieties of arthritis, atrophic, hypertrophic, and infectious, toxic. While the hypertrophic is easy to diagnose, the others frequently present many diagnostic difficulties because both start in the same way. There is the same age incidence, the same affected joints and the same general symptoms, as fever, high pulse, anemia, etc. X-ray may be a great help for diagnosis in such cases.

As to treatment, do not treat the joints alone, treat the general condition, raise patient's resistance. Just as in tuberculosis, improved hygienic

surroundings, fresh air and rest are of utmost importance. Locally, postures, supports, occasionally plaster casts, and caliper splints with traction may be necessary.

There is no specific diet with the exception of low carbohydrate intake, with plenty of fresh, green vegetables. There are no specific drugs in arthritis. The salicylates simply relieve pain, they do not cure the disease. Vaccine treatments are seldom employed in Robert B. Brigham Hospital, except in gonorrheal arthritis. Laboratory work is not essential, though helpful, as sugar tolerance, N. P. N., basal metabolism, sedimentation rate, etc.

As to focal infection, the speaker thinks that many teeth and tonsils are ruthlessly removed without helping the situation.

This address evoked a lively discussion, in which Drs. R. Fitz, William Liebman, and other members of the staff took part.

A luncheon followed the adjournment of the meeting.

M. J. KONIKOW, M.D., *Recorder.*

THE BOSTON SOCIETY OF PSYCHIATRY AND NEUROLOGY

The stated meeting of the Boston Society of Psychiatry and Neurology was held on Thursday evening, March 16, at the Boston Medical Library. Dr. E. A. Abbott presided.

The first paper of the evening was devoted to "Clinicopathological Material from the Howard State Hospital," and was read by Dr. J. Kasanin. His first case was that of a 48 year old male farmer, who three months previously had noticed a gradually growing pigmented mole at the angle of the left scapula. By advice of friends he had tied a string around it. At this time he began to lose his appetite, which developed to complete anorexia. He lost interest in his activities, grew apathetic and stuporous and finally succumbed, three weeks after admission. Before death he showed bilateral Babinski, and convulsions prominent as twitchings in the upper extremities. At necropsy the lungs were found dotted with dark nodules, with some nodules in the pericardium, and the dura over the brain appeared black colored as if covered with a hematoma. The black nodules extended all the way down the spinal cord. The speaker showed slides of the microscopic sections and emphasized the perivascular nature of the metastatic lesions in the brain substance.

The second case was one of Alzheimer's Disease. The patient was a 49 year old male widower who was in the hospital approximately two months. At 45 the patient became unduly sleepy and was unable to work as a lithographer satisfactorily. When his wife died a short time later he was incapable of making funeral arrangements. While dressing himself, he would fall asleep before the task was completed. He had been studied in another hospital where there was found marked mental deterioration, exaggerated reflexes, and an atrophy of the frontal lobes by encephalographic examination. At the Howard State Hospital he showed dementia, a twitching of the muscles of the extremities, and a rapid repetition of syllables and words. The studies of the spinal fluid and blood were negative. Just before death the discs became blurred. The slides of the brain in the gross showed marked atrophy of the frontal and temporal lobes with widening of the sulci. Microscopic studies revealed the fibrillary changes throughout the brain so characteristic of this disease.

The second paper was by Dr. H. C. Solomon and Dr. S. H. Epstein with the technical assistance of Dr. S. S. Hanflig on the subject "The Technique of Encephalography: Demonstration of a New Apparatus." Dr. Epstein stated that the great objection to encephalography has been the discomfort of the patient while air is being injected. It is necessary to introduce 100-200 cc. of air in order to obtain filling of the ventricles and distribution throughout the subarachnoid space. Sweating, bradycardia, weak pulse, projectile vomiting and intense headache were common symptoms experienced by the patient during this procedure.

In order to overcome this objection, 5-7½ grains of sodium pentobarbital (nembutal) was given intravenously at the Boston Psychopathic Hospital 20 minutes before the injection of air. A quick anesthesia is thus obtained, and when the patient regains consciousness he rarely has any complaint. In order to facilitate the handling of the patient, Dr. Hanflig has devised a special table which holds the patient in an upright position, allows moving the head from side to side, and expedites the making of good x-ray films. When the air has been injected, the patient is taken to the x-ray room where exposures are made.

The final paper of the evening was read by Dr. R. G. Hoskins on "The Organic Functions in Schizophrenia." The work was done in collaboration with Dr. F. H. Sleeper. Fifty-seven patients on whom the investigations were carried out averaged 31.7 years of age. There were few acute and chronic cases. All had well-established psychoses, but not much mental deterioration. The significant findings may be tabulated as follows: (1) The group averaged 84 per cent of the weight of normals of the same height and age. (2) Poor teeth were common. (3) The pulse rate was about 10 beats slower on reclining and standing than that of normal soldiers. (4) Urine excretion was double the normal amount, suggesting some disturbance in the hypothalamus or pituitary. (5) The average venous oxygen content of the blood was low. (6) The cholesterol was 15 points below the average normal. The speaker emphasized the great variation in determinations of the same factor in one patient on different occasions, and the uselessness of using one set of experiments for drawing conclusions.

Memorial by the Boston Society of Psychiatry and Neurology on the Death of Dr. Theodore August Hoch

Dr. Theodore August Hoch, late superintendent of the Northampton State Hospital, died in Northampton on August 4, 1932, at the age of fifty-three years. He received his degree in medicine at the Medical School of the University of Michigan, his native state, and began his psychiatric career at the Worcester State Hospital. In 1908, while pathologist at that hospital, he became a member of this Society. In his papers, in the discussions, and in all of his work he manifested to an exemplary degree a rare combination of well-balanced scientific judgment and sympathetic understanding.

Through his subsequent years at Worcester and during his service on the medical staff at McLean Hospital (1912 to 1925), and as Assistant Commissioner in the Department of Mental Diseases and as Superintendent at Northampton, administrative needs demanded an increasing share of his attention.

His last years were troubled by painful illness; yet he heartened a wide circle of friends by his fine courage, persistent endeavor and unfailing zest.

His death brings an untimely ending to his psychiatric work and an unusually deep sense of personal loss to his patients and friends.

For the Committee:
Ray L. Whitney, M.D.,
J. C. Whitehorn, M.D.

NEW ENGLAND SOCIETY OF PSYCHIATRY

The Annual Spring Meeting of the New England Society of Psychiatry will be held in the Auditorium of the Grafton State Hospital, North Grafton, Massachusetts, Tuesday, April 25, 1933.

The speakers will be Dr. Clarence M. Hincks, General Director, National Committee for Mental Hygiene, New York, whose subject will be "Current Trends in Mental Hygiene," and Dr. Felix Deutsch, of Vienna. Dr. Deutsch is a docent in the University of Vienna, and head of the hospital for cardiac and cancer research. He will speak on "Psycho-Physical Problems."

Harlan L. Paine, M.D.,
Secretary-Treasurer.

MASSACHUSETTS GENERAL HOSPITAL

Fracture Service

There will be a conference under the auspices of the Fracture Service, Friday evening, April 21, at 8:00 o'clock, in the Lower Out-Patient Amphitheatre.

SUBJECTS

Fractures of the Shaft of Femur. Dr. Van Gorder.

Compound Fractures. Dr. Daland.

April 28

Ununited Fractures. Dr. Allen.

Operative Treatment. Dr. Scudder.

Fractures of Metatarsals and Phalanges. Dr. Balch.

May 5

Fractures of the Skull. Dr. Hodgson.

Fractures of Facial Bones. Dr. Kazanjian.

House-officers, students and visitors welcome.

Philip D. Wilson, M.D.,
Associate Chief, Fracture Service.

THE BOSTON DISPENSARY

To Members of the Clinical Staff:

A meeting of the Clinical Staff of the Boston Dispensary will be held on Monday evening, April 24, in the Auditorium on the second floor of the Dispensary building, 25 Bennet Street, at 8:15 P.M.

Dr. Maurice B. Strauss, of the Thorndike Memorial, will address the Staff on the subject "The Etiology of Pernicious and Related Macrocytic Anemias."

Discussion by: Joseph H. Pratt, M.D., William A. Dameshek, M.D., Isadore Olef, M.D.

An invitation is extended to any who are interested in the subject.

Joseph J. Skirball, M.D., *President,*
James H. Townsend, M.D., *Secretary.*

SUFFOLK DISTRICT MEDICAL SOCIETY

Annual Meeting

The Annual Meeting, Suffolk District Medical Society, will be held in John Ware Hall, Boston Medical Library, 8 The Fenway, Wednesday evening, April 26, 1933, at 8:15 P.M.

Business:

Reports of Auditing and Nominating Committee.

Report of Treasurer.

Election of Officers.

Subject of the evening:

Organization of the Medical Profession for Rendering Best Medical Service. Dr. Channing Frothingham.

Discussion to be opened by Drs. Richard M. Smith, Frank H. Lahey, and Hans Zinsser.

William H. Robey, M.D., *President.*
Leland S. McKittrick, M.D., *Secretary.*

HARVARD MEDICAL SOCIETY

The next meeting of the Harvard Medical Society will be held in the Peter Bent Brigham Amphitheatre (Van Dyke Street entrance), Tuesday evening, April 25, at 8:15 o'clock.

PROGRAM

Presentation of Cases.

Vasodilatation in Vascular Disorders of the Lower Extremities. Dr. Eugene M. Landis, Robinette Foundation, Hospital of the University of Pennsylvania.

John Homans, M.D., *Secretary.*

SOCIETY MEETINGS, CONGRESSES AND CONFERENCES

April 20—New England Hospital for Women and Children. See notice on page 816, issue of April 13.

April 21, April 29, and May 5—Massachusetts General Hospital, Fracture Service. See page 866.

April 21—New England Roentgen Ray Society. See page 815, issue of April 13.

April 24 to May 5—Public Health Institute. See page 858.

April 24—The Boston Dispensary, Clinical Staff Meeting. See page 866.

April 25—New England Society of Psychiatry. See page 866.

April 25—Harvard Medical Society. See page 866.

April 26—New England Obstetrical and Gynecological Society. See page 814, issue of April 13.

April 27—Clinic in Medicine at Peter Bent Brigham Hospital. See page 861.

May 4 and 11—The Edward K. Dunham Lectures for Promotion of the Medical Sciences. See page 811, issue of April 13.

May 8, 9, and 10—American Gynecological Society. See page 516, issue of March 2.

May 9-10—American Climatological and Clinical Association. See page 769, issue of April 6.

May 12—William Harvey Society. See page 765, issue of October 27, 1932.

May 17—New England Physical Therapy Society. See page 1010, issue of December 1.

May 22-May 31—The New England Heart Association. See page 1011, issue of December 1.

June 12-16—Woman's Auxiliary to the American Medical Association. See page 815, issue of April 13.

June 13—The American Board of Obstetrics and Gynecology. See page 607, issue of March 16.

June 13—American Heart Association. See page 768, issue of April 6.

June 28 to July 3—Third International Hospital Association. See page 811, issue of April 13.

August 10, 11, 12—American Delegation to the International Goiter Conference. See page 768, issue of April 6.

October 9-12—American Public Health Association. See page 403, issue of February 16.

DISTRICT MEDICAL SOCIETIES

BRISTOL NORTH DISTRICT MEDICAL SOCIETY

April 21—See page 816, issue of April 13.

ESSEX NORTH DISTRICT MEDICAL SOCIETY

May 3—Wednesday, Annual Meeting. See page 769, issue of April 6.

ESSEX SOUTH DISTRICT MEDICAL SOCIETY

Tentative Program

Thursday, May 4, 1933—Censors' Meeting, Salem Hospital, 3:30 P.M.

Tuesday, May 9, 1933—Annual Meeting. Salem Country Club, Forest Street, Peabody. Golf in afternoon; greens fee $2.00. Dinner at 7 P.M. Speaker: Dr. George Burgess Magrath. Subject to be announced later. Ladies invited.

R. E. STONE, M.D., Secretary.

FRANKLIN DISTRICT MEDICAL SOCIETY

Meeting will be held at the Weldon in Greenfield on the second Tuesday of May.

CHARLES MOLINE, M.D., Secretary.

MIDDLESEX EAST DISTRICT MEDICAL SOCIETY

May, at the Meadowbrook Club, Reading.

ALLAN R. CUNNINGHAM, M.D., Secretary.

MIDDLESEX SOUTH DISTRICT MEDICAL SOCIETY

April 20—Annual Meeting. See page 816, issue of April 13.

May 4—Censors' Meeting. See page 816, issue of April 13.

NORFOLK DISTRICT MEDICAL SOCIETY

May—Annual Meeting. Time, place and subject to be announced.

May 4—Censors' Meeting.

FRANK S. CRUICKSHANK, M.D., Secretary.
1695 Beacon Street, Brookline.

SUFFOLK DISTRICT MEDICAL SOCIETY

April 26—Annual Meeting. See page 866.

May 4—Censors' Meeting. See page 815, issue of April 13.

WORCESTER DISTRICT MEDICAL SOCIETY

Wednesday, May 10—The Annual Meeting. Place and program to be announced later.

ERWIN C. MILLER, M.D., Secretary.

WORCESTER NORTH DISTRICT MEDICAL SOCIETY

April 25—Annual Meeting at the Burbank Hospital, Fitchburg.

BOOK REVIEWS

Calcium Metabolism and Calcium Therapy. By ABRAHAM CANTAROW, M.D., Instructor in Medicine, Jefferson Medical College; in Charge of Laboratory of Biochemistry, Jefferson Hospital; Assistant Physician, Philadelphia General Hospital. With a Foreword by Hobart Amory Hare, B.Sc., M.D., LL.D., Late Professor of Therapeutics, Materia Medica and Diagnosis in the Jefferson Medical College, Philadelphia. Second Edition, thoroughly revised. Lea & Febiger, Philadelphia, 1933. 252 Pages. Price $2.50.

This is a second edition of an interesting little book in which our recent accumulation of knowledge in regard to calcium metabolism is well summarized. With the present epidemic of interest in calcium and other inorganic salts, many able clinicians have much to learn in regard to the activity of these salts. As Dr. Hare states, in the foreword of this book, "the present use of calcium is, in many instances, the introduction of an agent of which the physician knows little into a body of which he knows less, in entire forgetfulness of the universal rule that any agent capable of doing good is capable, if improperly used, of doing harm". The book is an up-to-date correlation of the recent knowledge of the whole calcium problem in man. Unfortunately, the calcium problem is quite complicated but a clear appreciation of the various factors involved can readily be obtained from this short, well-written volume. For this purpose it is highly recommended.

The 1932 Year Book of Radiology. Diagnosis edited by Charles A. Waters, M.D., and Therapeutics edited by Ira I. Kaplan, M.D. The Year Book Publishers, Chicago. 750 Pages. 495 Illustrations. Price $6.00.

For a number of years there has been a demand for a year book in roentgenology. The present volume is a successful attempt to supply this want. The volume contains 750 pages and 495 illustrations; it is divided into two parts of about equal size, one on radiological diagnosis, the other on radiotherapeutics. There are many illustrations of excellent quality. The authors have presented in abstract form most of the important articles appearing in the American and foreign literature during the past year. In addition to the excellent presentation of the material reviewed there are frequent comments by the authors which should be especially helpful to those not expert in

this field of medicine. Particular attention is given to recent advances in roentgenological diagnosis and treatment such as the work of Schmore on the spine and the various methods of examining the gastro-intestinal tract; Coutard's method of treatment with massive x-ray dosage is also given special prominence.

The volume is an excellent one and should be of value to all physicians interested in roentgen diagnosis and treatment.

L'Hérédo-Syphilis Clinique et Therapeutique. Par le DR. JEAN HUTINEL et le DR. ALICE LINOSSIER-ARDOIN. Editors: Gauthier-Villars & Co. Paris 1932. Price 35 fr.

This book gives a very thorough presentation of the problem of congenital syphilis.

Like most French books, syphilis of the third and later generations is credited as occurring commonly and one finds the statement, rather surprising to American and English syphilologists, that syphilis in a congenital syphilitic mother is more likely to be passed to her offspring than is acquired syphilis in a mother.

The authors' understanding of paternal syphilis is the same as that recognized by most of the rest of the world as possible, but probably not actually occurring.

The authors wisely insist on serologic tests of all pregnant women regardless of their situation in life in order to recognize syphilis and prevent the congenital form by energetic treatment.

The discussion of the symptoms and treatment of congenital syphilis is excellent and thorough.

A Critique of Sublimation in Males: A Study of Forty Superior Single Men. By W. S. TAYLOR. Edited by Clark University, Worcester, Mass. January 1933. Volume XIII, No. 1.

The theory that sexual continence in young men is a practical possibility has its adherents and its opponents. In spite of the importance of this question to society today, very little is known of the facts involved. In "A Critique of Sublimation in Males," Taylor endeavors to throw light on this subject through investigation of the intimate lives of some forty young men of superior attainments. He finds that in every case there is some mode of dissipation of sexual energy; this takes place by means of dreams, often consciously induced, by masturbation or by resort to illegitimate sexual congress.

As a result of his study, Tayor concludes that in young men there is an "irreducible minimum of sexuality, in the sense of cumulative secretion, stimulation from within, and erotic sensitization: a complex physiological process, glandular, circulatory, nervous, muscular. This nuclear eroticism is never transmitted or sublimated away".

The most satisfactory answer to the problem, Taylor believes, lies in early marriages. His discussion of this subject is worth reading.

A Decade of District Health Center Pioneering. A Report of Ten Years' Work of the East Harlem Health Center. Report prepared under the direction of Kenneth D. Widdemer, Executive Officer. Price $1.00.

Ten years ago there were twenty-one organizations besides the New York City Health Department that were doing similar health and welfare work in East Harlem. There was, of course, much lost efficiency and duplication of effort. Stimulated by the New York Chapter of the American Red Cross, their various endeavors were brought together at the East Harlem Health Center in 1921. This report, although written and illustrated in the now well-known manner of the professional health-worker, is a valuable account of the advantages of coöperation among the related agencies of any community. It is planned to make this coöperation permanent by reëstablishing it as a district health center under the direction of the New York City Health Department.

The Early Diagnosis of the Acute Abdomen. By ZACHARY COPE. Published by Humphrey Milford, Oxford University Press. Sixth Edition. Price $3.25.

The new 1932 edition of the "Early Diagnosis of the Acute Abdomen" by Zachary Cope, published by the Oxford University Press, priced at $3.25, appears to be, upon casual reading, little if any different from the earlier text. This is necessarily so, in so far as the book deals primarily with the fundamental principles of diagnosis of the acute abdomen which naturally cannot change with time. It has been and probably always will be one of the best books on this subject and it certainly should be read by every medical student and should form a part of every practitioner's library.

Grundbegriffe der Klinischen Medizin. Eine Einfuhrung in die Klinischen Semester (Zugleich eine synthetische Terminologie). By WALTER MARLE. Second Edition, with 640 pages and 704 illustrations. Urban and Schwarzenberg in Berlin and Vienna, 1932.

This book of 640 pages, by Walter Marle, is a compendium of knowledge of internal medicine, which covers a very large field. It includes pathology, immunity, methods of clinical investigation, diagnosis, therapy, and then a brief account of diseases of neurology, psychiatry, surgery, obstetrics, and children's diseases, as well as the specialties of ear, nose, skin, and allied subjects. As a result, it is obvious that the presentation must be superficial, but for a brief summary of clinical medicine it is very well done, indeed. Naturally, much of the information consists of definitions which are clearly phrased, with a surprising amount of condensed and easily available information. For anyone who wants a brief account of the general field of medicine and therapy, this book is very well adapted.